

AMERICAN FORESTS *and* FOREST LIFE



NOVEMBER, 1925

TRAGEDIES OF A FLORIDA ROADSIDE
STATE PARKS THE PATH OF THE SAWMILL

VOL. 31, No. 383

PRICE 35 CENTS

The American Forestry Association

Washington, D. C.

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AMERICAN FORESTS AND FOREST LIFE

(Formerly American Forestry)

THE MAGAZINE OF THE AMERICAN FORESTRY ASSOCIATION

OVID M. BUTLER, Editor

WASHINGTON, D. C.

L. M. CROMELIN, Assistant Editor

Vol. 31

NOVEMBER, 1925

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Published monthly—35 cents a copy—\$4.00 a year

CHANGE OF ADDRESS

A request for change of address must reach us at least thirty days before the date of the issue with which it is to take effect. Be sure to give your old address as well as the new one.

Publication and Business Office, The Lenox Building, 1523 L Street, Washington, D. C.

Entered as second-class matter at the Post-office at Washington, D. C., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided in Section 1103, Act of October 3, 1917, authorized July 10, 1918.

Additional entry at Baltimore, Md., authorized July 23, 1925.

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AMERICAN FORESTS

VOL. 31

NOVEMBER, 1925

No. 383

Tracking the Sawmill Westward

*The Story of the Lumber Industry in the United States
as Unfolded by Its Trail Across the Continent*

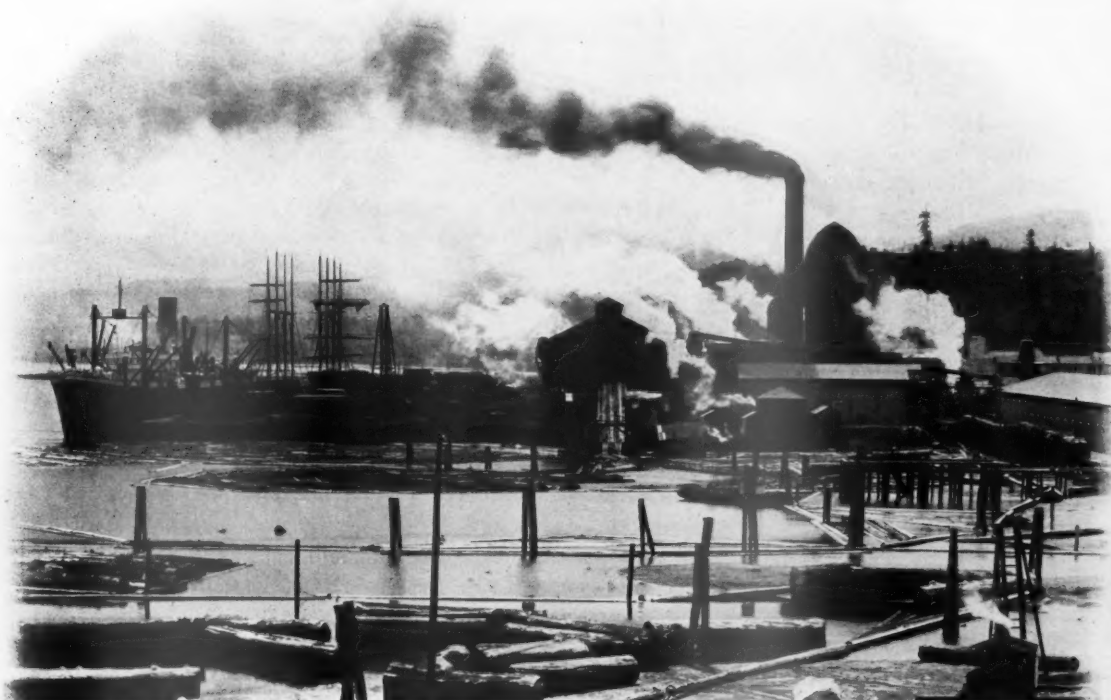
By R. V. REYNOLDS AND ALBERT H. PIERSON

"AND you really believe that?" we were asked incredulously the other day when we made the assertion that the center of lumber production in the United States today is in the prairie country of northern Kansas.

"Statistics prove it," we replied, hooking our thumbs

under our arms and leaning back in our chairs with the air that says only too plainly, "That ends all argument."

"Not so!" Our friend responded testily—"Say, I wasn't born yesterday. And I know Kansas. Why, a real he-man sawmill would starve to death in northern Kansas in forty-five minutes."



Photograph by J. D. Cress, Seattle.

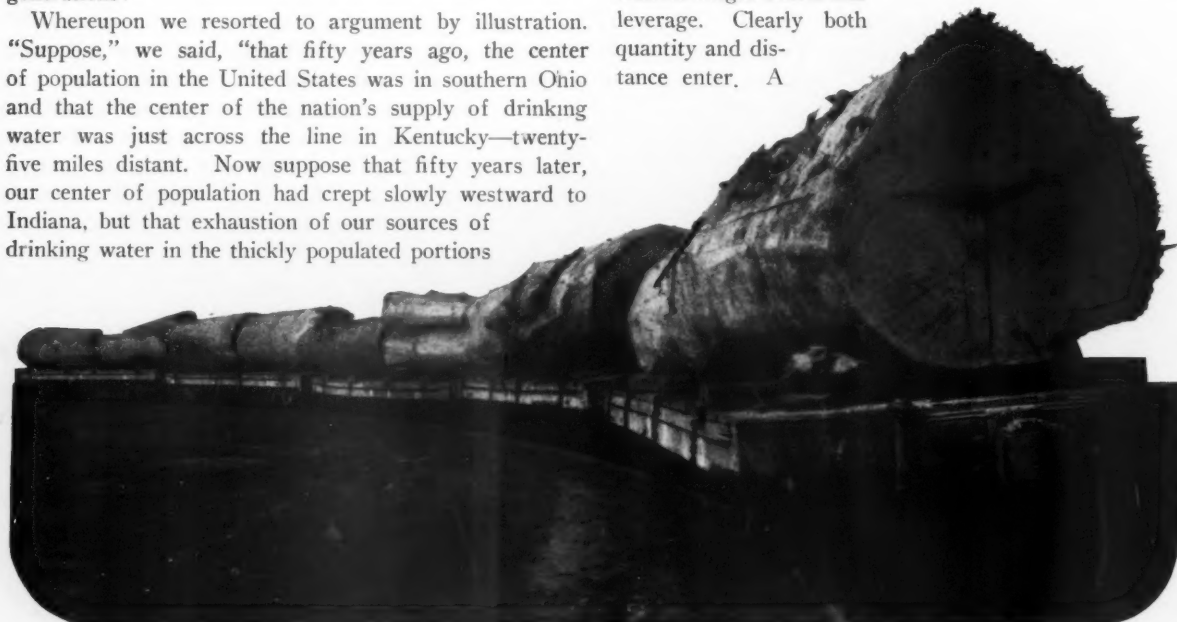
TREKKING EVER WESTWARD BY A DEVIOUS COURSE, THE AMERICAN SAWMILL HAS REACHED ITS HIGHEST DEVELOPMENT ON THE PACIFIC COAST AMONG THE LAST GREAT STANDS OF VIRGIN TIMBER. THE PHOTOGRAPH SHOWS A PUGET SOUND MILL AND VESSELS LOADING LUMBER TO BE CARRIED TO EASTERN MARKETS.

"True," we conceded, "but here are the figures, checked and rechecked a dozen times. They show that not only is the center of lumber production in the treeless prairies but that the center of our supply of standing timber is in Wyoming on the edge of a sage-brush plain."

"Indeed!" replied our friend, smiling graciously, "and having made these remarkable discoveries, what possible bearing have they on the fortunes of this and future generations?"

Whereupon we resorted to argument by illustration. "Suppose," we said, "that fifty years ago, the center of population in the United States was in southern Ohio and that the center of the nation's supply of drinking water was just across the line in Kentucky—twenty-five miles distant. Now suppose that fifty years later, our center of population had crept slowly westward to Indiana, but that exhaustion of our sources of drinking water in the thickly populated portions

boundary. Obviously, it would be the center of gravity of the map. If careless handling should break off Florida, then there would be a new balancing point, which would be further west and further north than the first one. What then if Missouri broke through, and fell? Although Missouri is about the same size as Florida, the center of gravity would not shift as far as before because Missouri is so much nearer the fulcrum that its weight exerts less leverage. Clearly both quantity and distance enter. A



REDWOOD LOGS FROM TREES A THOUSAND YEARS OLD ON THE WAY TO THE SAWMILL. CUT IN CALIFORNIA, THEIR LUMBER MAY GO INTO THE BUILDING OF HOUSES IN MAINE. DURING THE PAST 50 YEARS THE LUMBER INDUSTRY HAS MOVED WESTWARD AT AN AVERAGE RATE OF 12 MILES A YEAR, SEEKING NEW FORESTS TO CONQUER.

of the country had moved the center of supply to Alaska. Would not that revealed fact be of tremendous significance to this and future generations?"

"Right," exclaimed our friend. "And your calculations of the centers of timber supply and lumber production in relation to centers of population and timber consumption are of equally great significance in revealing our national situation in respect to present and future wood supply. I apologize for my stupidity of a moment ago."

In presenting a subject necessarily unraveled by computations almost without end, and yielding answers which at first thought seem beyond the realm of possibility, we relate the above experience in the hope of reassuring our readers that figures in the hands of honest men do not lie and that they speak with irrefutable force. It is as obviously possible for the center of lumber production to be in a region in which there are no trees or sawmills as it is for the center of an old-fashioned doughnut to be at a point where there is nothing but a hole.

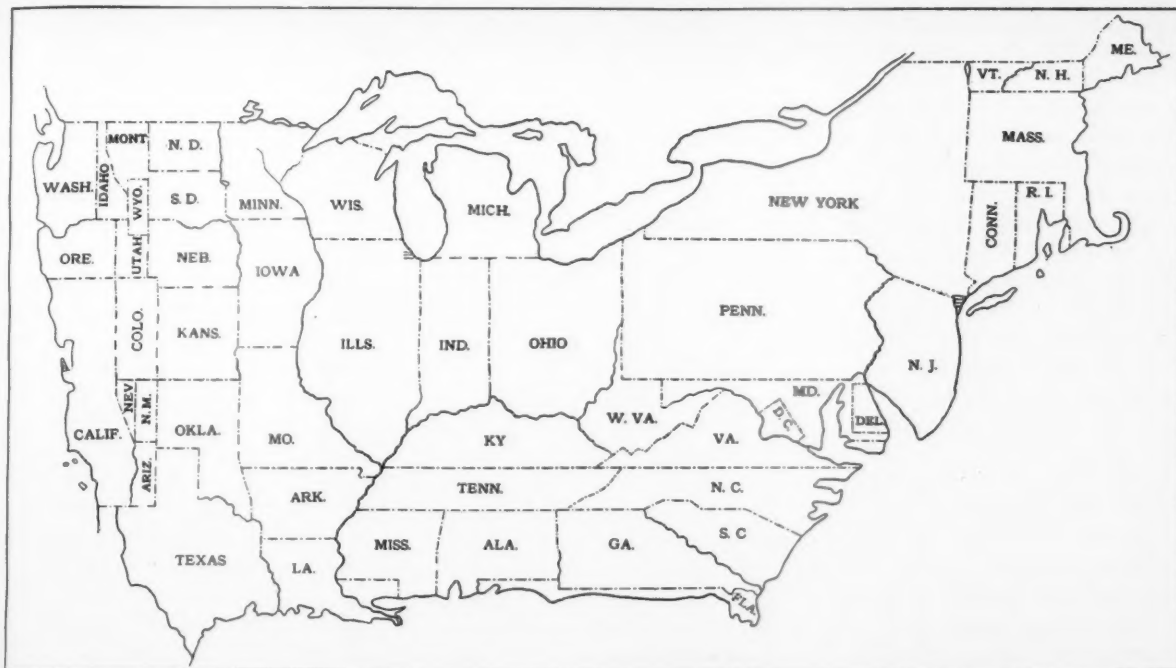
Let us suppose that some colossal being should lift the United States from its foundations, and balance it upon the tip of a Gargantuan fore-finger, as a child might handle a cardboard map. The balancing point would be half way across Kansas, near the Nebraska

small quantity at a great distance may counterbalance a large quantity at a small distance.

Mathematicians have long applied these principles to the determination of centers of various kinds. The Bureau of the Census has thus computed the center of population for each decade beginning with 1790. The authors, using the same methods have computed the centers at various periods for lumber production and lumber consumption, as well as a single point for the center of the present timber stand, and mapped their relations to one another and to the centers of population from decade to decade.

Centers of this kind respond sensitively and accurately to changes in either quantity or location of the data. If a block of the population moves, the center moves in a parallel direction and a proportional distance. Hence, the changes in location of such centers, from year to year, or decade to decade, constitute an accurate index of the average movement of the units, be they people, trees or sawmills. And with these movements clearly revealed, we can picture for the first time the rapid increase of the distance between the people and one of their most essential resources—the forests.

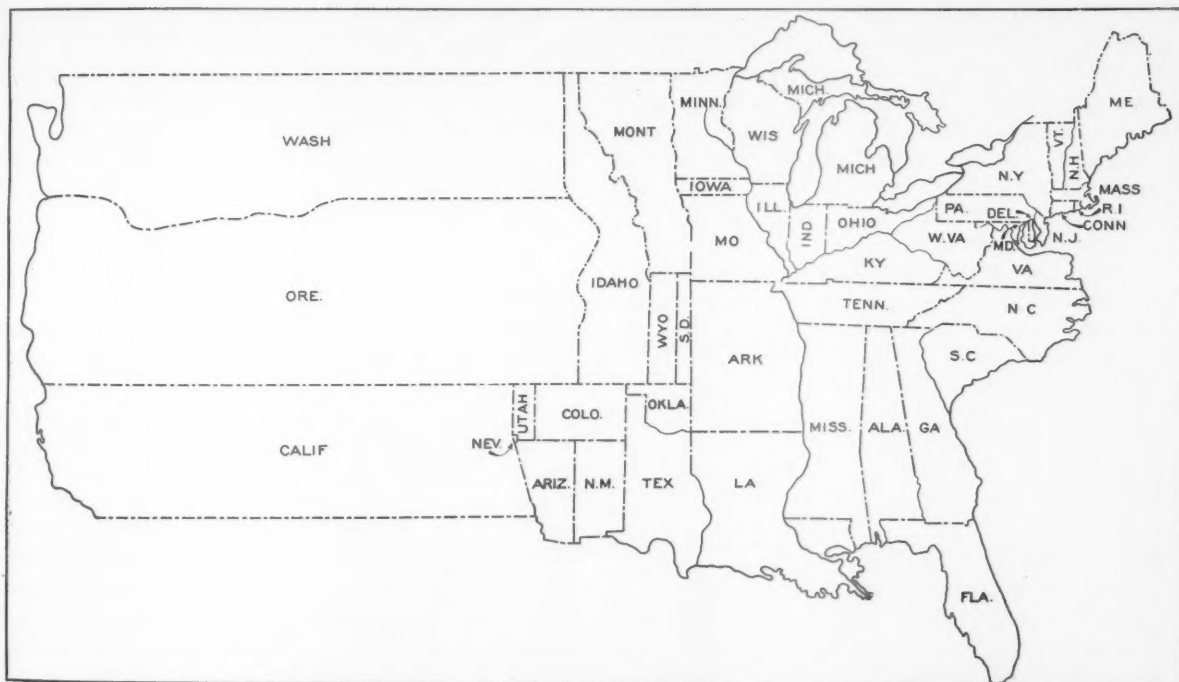
The centers of lumber consumption and population in the



Map by Courtesy of Evans-Winter-Hebb, Inc.

HOW THE UNITED STATES WOULD LOOK IF THE SIZE OF EACH STATE CORRESPONDED TO ITS POPULATION

The draftsman has so altered the state boundaries that each square mile contains the same number of people. As a consequence the heavily populated states east of the Mississippi and north of the Ohio and the Potomac occupy more than half of the national area.



HOW THE UNITED STATES WOULD LOOK IF THE SIZE OF EACH STATE CORRESPONDED TO ITS TIMBER STAND

Here the state boundaries have been so modified that each square mile contains the same quantity of timber. North Dakota, Kansas, Nebraska, and the District of Columbia do not appear, because they have practically no sawtimber. Oregon, Washington and California occupy about half of the national area. A comparison of these two maps shows more clearly than has ever before been expressed, the dislocation of the country's remaining forest in relation to its population.

United States have been in motion since colonial days, and they have clung to similar latitudes in their westward movement. It is obvious that if each person consumed the same amount of lumber annually, or in other words, if per capita consumption were uniform throughout the country, the consumption center would coincide with the center of population. Actual coincidence is not to be expected, but will be gradually approached as per capita consumption becomes more uniform across the country. Hence the lumber consumption center will always be found fairly near the population center for the same year, and on that side of it where the heaviest per capita consumption exists.

Between 1840 and 1899 the lumber production centers moved in latitudes which average a few miles north of the 40th parallel. Prior to 1840 reliable data are not available, but it is reasonably certain that in 1820 and earlier the location was somewhat farther south and east than in 1840, the computed point for which is in central Pennsylvania. To judge from the relations between population and lumber production in the early part of the 19th century, the center of production in 1770 must have been also north and east of the center of population for 1790, which was 23 miles east of Baltimore. An important colonial center which fulfills both these conditions is Philadelphia, which is accordingly taken as the approximate center of production in 1770. From this point and period down to the present, the trek of the American sawmill, typifying the greatest lumber industry in the world, is shown on the map on page 647.

During the period 1840-1860, the lumber business, then in its teens as an industry, made strides through the eastern pineries, and the center of production moved westward faster than at any other period of our history except that subsequent to 1909. It was heeding with a vengeance the advice "Go West, young man, Go West," for it was "stepping along" at the average rate of 20 miles a year.

By 1850 it had carried its standard from central Pennsylvania into the eastern part of Ohio. The population had increased 36 per cent in 10 years, which meant a great increase in the demand for lumber. A great many people were turning from hewn and hand-sawn building materials to mill-sawn lumber. The adoption

of steam power by the sawmills during the decade resulted in a greatly increased production. The rapid extension of railroads, in addition to the canal systems, made the distribution of an increased cut possible.

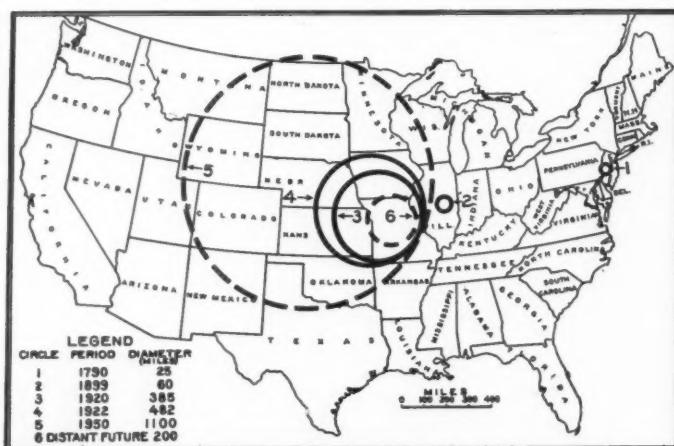
With the aid of steam the lumber production center practically overtook the center of population in 1850.

The lumber cut had risen to five and a half billion feet. New York was the leading producer, although it accounted for only 22 per cent of the cut instead of 30 per cent as previously. Pennsylvania was second, and Maine third, while Ohio and Michigan had displaced Virginia and South Carolina for fourth and fifth places. The increasing production of the Central and Southern groups was such that the line followed by the center shows a distinct sag to the southward.

Another decade and the young sawmill "in boots" had made another long stride westward, crossing Ohio and leaving Population almost 100 miles behind. The path of the production center sagged still farther southward, yielding to the relaxing grip of New York and New England, and responding to the increasing cut in the Southern States and California. Pennsylvania led in lumber production and the national cut mounted to nearly eight billion feet, due to the increased number of mills in new locations and the introduction of gang-saws during the period.

In the decade 1860-1870, the Civil War turned the lumber trail northward 100 miles, toward the great mills in Michigan, which were springing up like mushrooms in the forest. The enormous cut of Michigan, which became the leading lumbering state in 1870, unbalanced by the abnormally low production of the South and West, caused the lumber center to retreat 25 miles to the east. On account of this reverse in direction, and the continued heavy pull of the Michigan cut, the production center lingered for about 25 years—1850-1875—in Ohio. The Northeastern group of states still led in production, but the Lake States during the period advanced to second place as producers, displacing the Central States. The establishment of fast-cutting circular saws as standard equipment in large mills aided in raising the cut of 1870 to thirteen billion feet.

No spectacular change occurred in the decade 1870-1880. The westward movement was resumed, though at



GRAPHIC ILLUSTRATION OF THE INCREASING DISTANCE BETWEEN THE CENTERS OF LUMBER PRODUCTION AND CONSUMPTION

Each circle touches both centers at the period named. The increasing diameters are closely linked with the increasing haul and the increased price of lumber.

a much reduced rate, and the center of 1880 was in eastern Indiana. Although the Lake States wrested leadership in the amount of lumber produced, the southward tendency of the center of production is again observable. But it was the wonderful development of lumbering in the Lake States during the 20 years between 1860 and 1880 that held the westward movement of the sawmill to only 26 miles during these two decades. Eighteen billion feet constituted the lumber cut of 1880.

During the ten years following 1880, the lumber industry, now grown to a fair sized giant, got back in its league boots and stepping westward across the State of Indiana, planted its center post 86 miles southwest of Chicago. The big mills at this period were equipped with band saws and in 1890 were ripping out a cut of 27 billion feet. Michigan led for the last time and by the end of the century, the industry, fickle at the beckoning of the great pine forests of the South, had turned its steps in that direction and moved its center 90 miles closer to Dixie land. The South had come back and the waning forests of the North had to yield ground. The Lake States still led in production, but the South had leaped into second place, and was contributing 25 per cent of a yearly cut mounting to 35 billion feet.

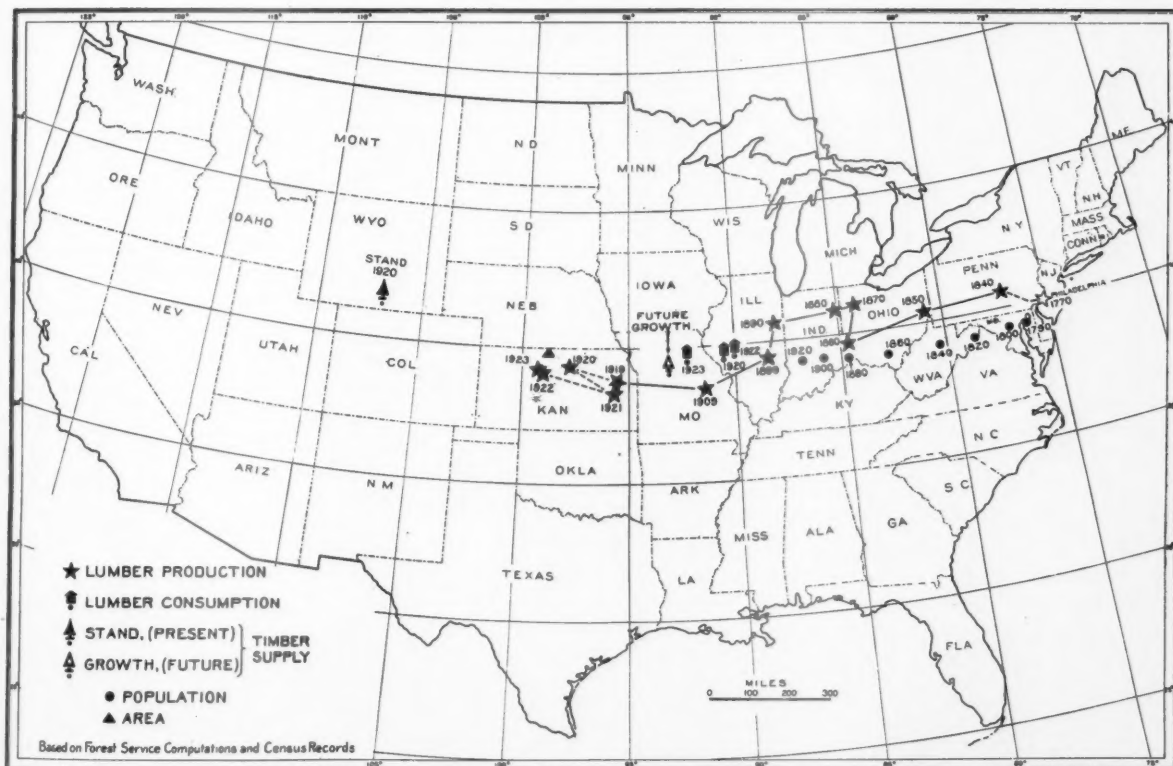
In no previous decade has there been such an enormous increase of lumber production. With perfected

equipment, plentiful railroad facilities, and a population of 75 millions (over four times that in 1840), the doom of America's virgin timber was forecast.

The year 1907 stands out as the year of peak lumber production in the United States, with an estimated cut of 46 billion feet. The South easily held leadership, but a new contender had come out of the west—the Pacific Coast States, containing the nation's last great stand of unexploited forests. In 1909, the West pushed into second place, diverting the path of the industry from the South toward the setting sun at a rate of 15.9 miles a year and lifting the center of production across the Mississippi River into eastern Missouri.

The lumber industry's westward movement of 159 miles in 10 years is significant, for it reflected clearly the decreasing supply of eastern forests as compared with those of the West. It marked the South and the West as the only real rivals left in Uncle Sam's far-flung forest domain.

Between 1909 and 1919 the industry drove westward at a rate which smashed all records. It carried the center of production from eastern Missouri to eastern Kansas, a distance of 218 miles and chalked up a total westward movement from Philadelphia of 1,100 miles. In this last spurt, the trend of its track was northward for the first time since 1870, a symptom of forest ex-



THE TRAIL OF LUMBER INDUSTRY AS TRACED FROM PHILADELPHIA WESTWARD THROUGH CENTERS OF PRODUCTION AND CONSUMPTION AT DIFFERENT PERIODS. STRANGE AS IT MAY SEEM, THE CENTER OF LUMBER PRODUCTION IN THE UNITED STATES TODAY IS IN THE TREELESS PRAIRIES WHILE THE CENTER OF CONSUMPTION LAGS MANY MILES BEHIND. DURING THE DECADE FOLLOWING 1909, THE LUMBER INDUSTRY SMASHED ALL RECORDS BY MOVING WESTWARD 218 MILES — A STRIKING REFLECTION OF THE DWINDLING SUPPLY OF FORESTS IN THE EAST.

haustion in the South and the rising tide of lumber production in the great forests of the Northwest. Hundreds of sawmills in the South dismantled their plants and moved across the treeless prairies to new virgin timber on the Pacific Coast. The national cut decreased by 10 billion feet or more to 34.5 billions and the center of population was left far behind, 465 miles to the east.

In the four years following 1919, the track of the sawmill army continued westward, crossed the western edge of eastern timber growth and established its center of production in 1923 well out in the prairies of Kansas, 250 miles west of Kansas City and 1279 miles from its starting point in Philadelphia. The record of its slashing, sawing campaign westward, clearing land for settlement and supplying lumber for development is a graphic picture of the extent to which deforestation in the United States has forced the center of lumber production farther and farther away from the center of population which represents within reasonable limits the center of lumber consumption.

THE WESTWARD RACE

How the Lumber Production Center Outstripped Population

Year	Miles West from Philadelphia		Miles Between Population & Production
	Population Center	Production Center	
1770	50	0	50
1820	190	25	165
1840	274	99	175
1850	330	300	30
1860	405	500	95
1870	448	473	25
1880	501	526	25
1890	547	682	135
1899	563	703	140
1909	602	862	260
1919	615	1080	465
1920	615	1200	585
1923	615	1279	664

In this table, distance is measured along 40th Standard Parallel. The point used for Population in 1920 and 1923 is that for 1919, but this fact probably does not introduce an error of considerable size, as Population is not moving rapidly. Between 1909 and 1919 its average westward movement was only about one mile a year. About 1855 Production, which had previously been further east, passed Population, and has been in the lead ever since.

In the first 50 years—from 1770 to 1820—the average rate at which the lumber industry moved westward was probably not more than half a mile a year while in the last 50 years—1870 to 1919—the average rate was 12 miles a year. But in the last census decade, ending 1919, the average yearly rate was 22 miles and in the four years succeeding 1919 the average westward travel was 50 miles a year. This remarkable increase in the speed at which the industry has been moving westward

in recent years is evidence of forest exhaustion in the eastern United States so irrefutable and so portentous to eastern states that it should not escape public attention or the serious concern of statesmen.

The center of our remaining standing timber, however, is in south-central Wyoming. Theoretically, this center is travelling west at half the rate of the production center, or about 20 miles a year. Practically there is no means of determining the rate of motion, and we can not even be positive that it has not stopped moving westward, as is bound to be the case sooner or later because the western forests are being reduced rapidly.

National economy would keep the Production center close to Population and Consumption, but forest depletion is dragging them further and further apart. The connecting link is transportation. Where transportation is primitive, the distance between them can not be great; but with our highly developed transportation systems, lumber Production has wandered far from Population in its search for the timber center, with which it tends to coincide, just as Consumption tends to coincide with Population. Under the most favorable conditions for consumers the centers of Timber Supply, Production, Consumption, and Population should be relatively close together,—not widely separated, or moving apart as at present.

The higher prices of lumber are due in part to the great and rapidly increasing distance between the centers of Production and Consumption, which measured 385 miles in 1920. Owing to circuitous routes and reshipments, the actual length of the average haul in the same year is considerably greater than the distance between the centers as plotted, and is computed to be 670 miles.

It is to be expected that the center of lumber production will continue to move northwesterly for some years as the western cut grows in proportion to that of other regions. Then, as the declining eastern cut reaches a point where it can maintain a relatively steady output from second growth forests, and the western cut stops increasing, the westward progress of the lumber production center will be retarded, and finally brought to a halt. And after that event, which may occur within the next 20 years, the Production center will retreat easterly by degrees, though never again to return to the place of beginning on the Atlantic Coast.

Looking back over what has been noted of these centers, it is seen that 150 years ago the centers of Population, Production, and Consumption were all located close together in the region of Philadelphia, while the center of Timber Stand was off by itself, in the neighborhood of St. Louis. All four started west at the same time, Production in hot pursuit of Timber, Consumption jogging along relatively close to Population. The track lay between the 39th and 40th parallels.

Up to 1899, Production and Consumption remained so close together that they could have been enclosed by a circle never larger than 100 miles in diameter, and often very much smaller. After 1899, they began to draw

(Continued on page 686)



THE PRONGHORN ANTELOPE HERD ON THE WICHITA NATIONAL FOREST AND GAME PRESERVE

In an effort to bring back this remarkable animal, native only to America and "more wonderful than the rarest orchid," the United States Government is making special provision for its safety and propagation in protected areas.

The Pronghorned Antelope

America's Own—Shall We Permit Its Extermination?

By SARA HYDE WOODS

HOP, skip and jump! The dainty pattering of dancing feet! I attempted to rouse myself from the drowsiness which had overtaken me as I reclined against the trunk of a tree, book in hand. The steps were coming nearer. I rubbed my eyes to gain a clearer vision. There before me, frolicking in wondrous ease and beauty, was a group of Mother Nature's children, the pronghorned antelope. Such charm, such elegance of form, such grace of movement! Suddenly I was observed and the play halted. One of the number, as though the right belonged to him, advanced ahead of the rest to investigate my intrusion, but what a change had come over him! Although he still retained his delightful fascination, his sporting attitude had been cast aside and dignity had taken its place. Step by step he drew nearer, eyes intent upon me and head held high with all the pride and aloofness of a king.

I would not dispute with the pronghorned his right to the royal grandeur which he assumes for none other

in the animal world has more right to it than he. He is in very truth a king for, while most animals have to share their family records with dozens, even hundreds of species, he is the one and only one of his species in the whole wide world. This unique distinction, in itself, may well justify his pride but another honor has been bestowed upon him, for, has not the greatest of all governments seen fit to distinguish him with official recognition?

Yes, such is the case. The United States Government, viewing with dismay his rapidly diminishing numbers, has made special provision for his safety and propagation in protected areas, hoping against hope to prove that the fast-disappearing species can be perpetuated in captivity. With great wisdom, and due in large part to the efforts of the American Bison Society and the Boone and Crockett Club, the Wichita Game Preserve, located in Comanche County, Oklahoma, has been selected as one of the localities suitable for this work. Here on the wide plains and prairies, with the beautiful

old Wichita Mountains in the background, these dainty creatures which have come so near to extinction are cared for and protected in their native environment, safe from the hand of man, the gun of the hunter and the maw of the wild animal.

Three attempts have been made to establish successfully a Pronghorned Antelope herd in this region but just when success seemed assured, disappointments came and the little herd suffered severe losses. At the present time, the herd numbers 15 head. A fatal malady occurs in the early fall, the exact nature of which has never been determined. Many recognized authorities have made the statement that this unique species cannot be perpetuated in captivity but those in charge of this particular band still cling to the hope that success will finally crown their efforts. Mr. S. M. Shanklin, Supervisor of the Wichita National Forest and Game Preserve is greatly concerned with this phase of his work and leaves nothing undone which time, thought and care can do to bring ultimate success to the undertaking.

When the first pioneers came to the western regions of North America, they found in great numbers, almost as numerous as the bison of that time, the beautiful Pronghorned Antelope which occupied the open flat country from Mexican territory to the Saskatchewan River. It was impossible for them to determine just what kind of an animal this was which so fortunately inhabited their new country, for it seemed to be possessed with a mixture of many characteristics, having the feet of a giraffe, the glands of a goat, the coat of a deer, the horns of an ox and deer combined, the eyes of a gazelle, the build of an antelope, and—the speed of the wind. They did not, however, worry themselves with the classification of the animal for its flesh was delicious and they began its slaughter, which has continued until the animal is now on the verge of complete annihilation. It was not until many years later that scientists made a thorough investigation of this antelope and, discovering no established family to which it could be relegated, found it necessary to class it as an unique species and gave it the technical name of

Antilocapra americana. Although universally known as "Antelope" the Pronghorn differs so greatly from the true antelope that it is really the type of a distinct family.

The Pronghorned Antelope is a grazing, cud-chewing animal. It is the swiftest four-footed creature of the plains but is short-winded, does not possess great powers of endurance and, very oddly, is not inclined to attempt leaps over large obstacles in its path. Some writers have made the statement that the open country in which the animals have made their home, not creating the necessity for jumping, have made them unable to accomplish this feat. The fact, however, that rangers on the Wichita Game Preserve have seen them make "standing jumps" of more than six feet while they were being sprayed for ticks seems to disprove this statement.

The animals are naturally shy and timid creatures but are easily tamed and soon become very social and friendly. They are able to avoid danger by their intelligence and will retreat on the slightest provocation. When running from danger they carry their heads low and make long leaps. They are, however, possessed with a great curiosity and will often pause in their flight to gaze at the cause of their alarm. This very characteristic has often beguiled them into danger, for hunters in the early days took advantage of their inquisitiveness. It required nothing more than a bit of fluttering cloth to arouse their wonder and draw them within easy range of shot. The animals on the Game Preserve exhibit this trait very markedly and when a camera is brought within their range of vision they at once become so desirous of investigating that it is almost impossible to keep them far enough away from the instrument to secure a good picture. Sometimes a bucket of oats will hold their attention long enough to get a hurried snap.



**THE GREAT PRONGHORN—
AMERICA'S OWN**

Shall he, a king in his own right,
the swiftest four-footed creature of
our Western plains, be permitted
to vanish from our wild life?

The Pronghorned Antelopes are essentially gregarious. In the days of their wild, free life, they congregated in great herds of all ages and grazed together as one large family from the beginning of September to the end of February. At the beginning of March, however, the does began separating from the herd to drop their fawns.

With true mother instinct they then became very cautious and usually selected clumps of cactus for the places where their babies should rest. In the middle of the cactus beds, they cut clear a space with their sharp little hoofs and their nests were safe from the marauding coyotes and wolves. They have often been known to show great bravery in the defense of their young. One instance is related by an eye observer of a mother who successfully fought off with her horns and hoofs the savage attacks of an eagle. After the fawns were born, which averaged one or two to each doe, the mothers and young again congregated for mutual protection and the bucks wandered off alone. After two or three months, however, they again returned to their families and the herd continued as before.

It is a law of nature that the does should be wary of their best friends when the time draws near for the birth of their fawns. The rangers on the Game Preserve have noticed that the animals which have fed from their hands all year at that time become very wild, hiding out in the tall grasses for several weeks and running away at their approach in order to conceal the whereabouts of the young. During the mating season the bucks are very quarrelsome and often engage each other in fierce contests.

The Pronghorned Antelope is about the size of the white-tail deer formerly so common in the Southwest. It averages about four and one-half feet long and three feet high, with slim graceful legs, short tail, erect pointed ears, large eyes and small hoofed feet which carry no traces of the lateral hoofs so commonly present in the Bovidae. In color, it is a beautiful light brown on back and sides, the rest being white, with the exception of a brown band around the neck and black "side-burns" on the bucks.

In appearance the coat of the animal is very lovely in summer, the hair being smooth and flexible. As winter approaches, however, each hair thickens and the interior grows spongy. It soon becomes brittle and breaks easily. This peculiar fur forms a close and warm covering for the animal but renders the skin useless as fur for commercial purposes. Neither is the skin suitable for leather.

Of the two most interesting and distinguishing characteristics of the Pronghorned Antelope, the first is the peculiar horns which give the animal its name. Their structure is very strange for they throw out a projecting point or prong on the anterior edge just at the spot where the horns begin their backward curve. The longer prong is turned over at the end like a hook. The Pronghorned Antelope is the only living mammal possessing hollow horns, growing over a bony core, which sheds them annually. It is also the only animal possessing a hollow horn which bears a prong. For many years, zoologists would not admit the possibility of a hollow-horned ruminant shedding its horns and

it was not until about 1868 that they were willing to admit the truth of such statements on the part of hunters. These horns which, on the males, can be felt as prominences at birth, break through the skin at about four months while those of the females appear later. They grow directly above the eyes and consist of a hardened and thickened skin on a bony core. This thickened skin or horn is usually shed by the adults in October and by the young in January. As soon as the old horn is dropped, the new horn can be seen, for it has already started to grow under the old one and in all probability has been partly instrumental in pushing off the old one. The bony cores which are retained permanently are dagger-shaped without branching and the new horns begin their growth on the caps of these cores, gradually extending down and completely over them. The outsides of the horny sheaths are covered with hair as are the horns of the giraffe. In respect to the shedding of the horns, the Pronghorned Antelope resembles the deer more than it does the true antelope.

The second interesting and distinguishing characteristic and the peculiarity which is most likely to catch the eye of the traveler is the white discs on its rear. By means of a circular muscle on each buttock the Pronghorned Antelope can erect the hair of the rump patch into a large, snow-white, fluffy, chrysanthemum-like ball. This white hair flashes in the sun and shows as a bright spot from afar off when the animal itself cannot even be distinguished. The animal's eyes, which are wonderfully keen, can discern these spots and they are used as signals to each other when danger threatens. The hair is always raised when the animal is frightened. The action is but momentary, the hair soon resuming its normal position.

When we stop to consider the vast numbers a century ago of this most interesting, delightful and lovable of all wild animals, which nature has given no other country in the world and then to realize that civilization has all but eliminated it, Americans should do their utmost to safeguard the few remaining lest they go the way of the dodo. All should agree with Doctor Hornaday, Director of the New York Zoological Parks when he says:

"Let him who hereafter may be tempted, either lawfully or unlawfully, to raise a death-dealing rifle against one of these beautiful prairie rovers remember two things before he pulls the trigger: In this land of plenty, no man really needs this creature's paltry pounds of flesh; and if his two-cent bullet flies true to the mark, it will destroy an animal more wonderful than the rarest orchid that ever bloomed.

"The destruction of this beautiful and interesting creature is now absolutely inexcusable and for the good name of Americans generally it is to be hoped that whenever a wild Pronghorned Antelope is now to be found, public sentiment will protect it more powerfully and more permanently than can any statute law."



“When the frost is on the punkin’, and the fodder’s in the shock.”

Trees for Pleasure and Profit

Plant So That Your Trees May Do Triple Duty in Contributing Shade, Beauty and Revenue to the Home

By LEWIS EDWIN THEISS



THE landscape man uses trees as a means to an end. They are the materials with which he endeavors to make a picture. But the average home builder, ignorant of the landscape man's real purpose, too often copies the letter of the professional's work without at

all grasping the spirit of it. He thinks the professional has made a given yard beautiful by planting certain trees, whereas the truth is that he made it beautiful *by the way* he planted those trees. So it is not the trees in themselves that always work the beautiful result, but the manner in which they are used.

Nature has given us so many plants, that not only are

not even be the best for the purpose. The picture's the thing—not the materials from which it is made.

Possibly the evergreens form an exception. If the householder wants green about his home in winter, he must use those plants that will give it to him. But for the remainder of his picture, the householder has the whole realm of the tree world from which to choose. If he wants tall and majestic trees, or low, bushy growths, or wide-spreading trees, or feathery foliage or dense leaf masses, or column-like effect of impressive trunks, or a hundred other different qualities, which are the things that influence the architect in his choice of materials, the home owner may choose from a vast multitude of plants not commonly utilized in

yard decoration. With a little thought and investigation, he can work out a very satisfactory picture for himself,



those commonly used by the landscape architect not the only materials with which he could accomplish his ends, but they may

THIS PICTURE OF THE AUTHOR'S HOME IN PENNSYLVANIA PROVES THAT PRODUCTIVE TREES "BELONG" TO THE HOUSE. PUTTING HIS THEORY SUCCESSFULLY TO THE TEST, MR. THEISS HAS PROVED THAT PRODUCTIVE TREES ARE FULLY AS LOVELY AS THE PURELY ORNAMENTAL ONES. CROPS OF FINE FRUIT,—APPLES, PEARS, PEACHES AND PLUMS; AND NUTRITIOUS NUTS—PECANS, FILBERTS, HICKORY NUTS AND WALNUTS ARE SUBSTANTIAL WITNESSES FOR THE "PRODUCTIVE" TREE

and do it with species that may be far more suitable to his particular situation than those a professional architect would em-



Courtesy United States Forest Service.

THE LOFTY BLACK WALNUT SPREADS ITS LIMBS PROTECTINGLY
OVER AND ABOUT THIS HOUSE

ploy. For the average man, life has become so burdensome that it seems a shame homeowners get so little return from the outlay for their homes. In the average case the home is a pretty big liability. There is a continual outgo for upkeep and repairs and taxes, and no return except in the form of shelter. The average man ought to get more than that out of his home plot. He can do it by utilizing productive plants in his yard planting.

Many home owners do have vegetable gardens, which return them substantial sums each year in cash value. But why not apply this same principle to the planting of trees as well as smaller plants? Why not include among the trees for the home grounds some that will supplement the vegetable garden as producers of revenue?

I believe in the use of or-

namental trees, and we have set out a number on our grounds. But our policy is to make most of our plantings of the kind that will put something into our pockets. This seems just plain common sense, for the productive trees are fully as lovely as the purely ornamental trees.

If I look out of one of my study windows, I see a row of American elms that I have planted along the roadway. And I might say here that public vandalism is so great in this country that it is not safe to put productive plants on the roadside. So I secured the elms to line the road. But within the boundaries of our grounds we have planted mainly productive trees.

Close beside one of my study windows is growing a fine young pecan. I can see several more pecans as I glance out of the window. Another window of my study is shaded by a beautiful English or Persian walnut tree, and several of these, too, are visible from that same window. Without moving from my chair I can see through my study window six cherry trees of different sorts, including both sweet and sour varieties. Three apple trees are also visible in the home grounds proper, and many more in the orchard. I can likewise see two pear trees and two plum trees from my window. On other sides of the house stand a tulip tree, a cedar tree, a pear, two apples, four cherries, a hickory, two filberts, a Japan walnut, and a heart nut tree. To be sure, we have lots

of ground. Yet all the
trees named to-
gether with
the house, in
a space ap-



NUT HARVEST TIME—THE AUTHOR GARNERS THE FRUITS OF HIS
FAITH AND LABOR

proximately 100 by 250 feet in size, that we consider the home grounds.

There are, of course, too many trees for the space. Most of the fruit trees were on the grounds when we bought the property, and had been planted close together by the former owner.

The nut trees and a few fruit trees are of our own planting and are better spaced, and being young still have more than enough room. However, we do not object to the close planting. It affords shade, and can easily be remedied, when necessary, by the ax.

It is surprising how many trees can be fitted into a small area without greatly overcrowding. Many productive trees are naturally of small height. Sour cherries, pears, peaches, filberts, nectarines, hard-shelled almonds, plums, quinces, apricots, all of which we have growing on our land, though partly in the orchard, are naturally small. So are some apples. The three in our home grounds are of this sort, being Yellow Transparents and Wageners.

In addition to choosing small varieties, one can also keep the trees small by not encouraging growth. I do nothing whatever to stimulate the small apples in our home plot. In the orchard, where the trees have ample space, we want them to grow large, and so we cultivate and fertilize. But these yard trees are neither cultivated nor fertilized. They are sprayed and kept perfectly healthy. They grow slowly but produce well. Inasmuch as even a moderate-sized fruit tree will bear as much fruit as an average family can use, there is no real reason for stimulating such trees to large growth. Better have a number of small trees than a few large ones, and so get a larger variety of fruit.

Productive trees, however, include some of the largest and most majestic trees we have. So one could almost say that tree foods can be raised on three levels. Fil-

berts make wonderfully fine hedges. They can be used for boundary plantings, or as mass plantings, and are quite as effective as other hedge materials. Yet they yield crops of fine nuts. The European filberts are preferable to the American filberts or hazels, having been

bred up to finer quality and larger size. The two sorts should never be planted near each other, for the European is fatally harmed by a disease that is quite likely to be found on the American hazel, and which harms the hazel hardly at all, it having become largely immune to it. So plant the one sort or the other, but do not mix them. Quinces also make a good ground-floor planting, as do some of the dwarf fruits.

The second-story level will consist of such productive trees as sour cherries, plums, pears, peaches, apricots. It is desirable to keep fruit trees low, by both artificial and natural means. The trees are easier to care for and it is much easier to gather the fruit.

But nut trees, which form the attic level, may be as high as they can grow. Altitude will not harm the nuts

at all, and a high tree gives a lofty shade that is just the finest sort of protection for hot weather. Cool breezes can sweep under a lofty tree, whereas a low, bushy tree shuts out the breeze. Black walnuts make a shade through which sunbeams flicker. It is an ideal shade for children to play in. And the foliage, very beautiful, allows the wind full sweep under the tree.

Trees of any sort are pleasing about a house, but probably the tree that makes most for charm and beauty is a lofty tree that spreads its limbs protectingly over and about the house itself. This the average fruit tree cannot and should not do. One commonly thinks of the elm as preeminently the tree for such purpose. Yet it is no better dooryard tree than the pecan. The latter is one of the most majestic growths in America. Where



Courtesy United States Forest Service.

SOME OF OUR LARGEST AND MOST MAJESTIC TREES ARE PRACTICAL PRODUCERS—THIS IS A GROUP OF MAGNIFICENT HICKORIES

it grows at its best, in the Mississippi bottoms, it sometimes attains a height of 175 feet. In the North such growth cannot be expected, yet it should grow there to be as big as the oak or the elm or the chestnut. Its shade is not of the dense kind. Its foliage is beautiful, and the fall coloring of the leaves makes the autumn pecan a thing of exquisite beauty. The English or Persian walnut is not nearly so large a tree and makes a denser shade. Yet it grows to good size, and the foliage is very lovely.

One reason why worth-while nut trees have not been available for home use has been the difficulty in grafting nut trees. That has been overcome, and now nuts are grafted as readily as fruit trees are. This makes it possible to secure nuts of known varieties that will bear nuts true to type, and also trees that are made hardy by being grafted on black walnut stocks. They have withstood winter temperatures of 25 degrees below zero without a sign of injury.

We have three varieties of pecans—Butterick, Busseron, and Indiana. These are varieties that originated along tributaries of the Mississippi River, in Indiana, Illinois, and at other northern points. They are quite hardy. By securing good grafted stock, one can successfully raise either pecans or English walnuts wherever peaches are grown—and that takes us well up into New England, for Massachusetts has large numbers of commercial peach orchards. There are commercial English walnut orchards as far north as Buffalo, New York.

It is not worth while to plant seedling nut trees. There is no certainty that they will bear good nuts or that they will bear anything at all; furthermore, it takes many years for them to reach bearing age. Grafted nut trees are like grafted fruit trees. They come into bearing in a few years, and produce true to type.

It is hardly necessary to speak of the stimulating quality of fruit foods. They possess vitamins and their juices unquestionably have a tonic quality. There is much truth in the old saying that "An apple a day keeps the doctor away." We need to eat more fruit than we do. But it is so high priced that we are prone

to consider it as a luxury, like candy, when we should consider it as a necessity, like potatoes. Even when we would like to eat more fruit, many of us can not afford to pay the prices asked.

It is not essential to know exactly what any tree will yield. The point is that a few productive trees will yield bushels of fruit that will be welcome to the home owner, that will be beneficial to his family, and that will give him far more fruit than he could afford to buy. For instance, we used every peach out of the ten baskets of peaches furnished by our two small peach trees. But I am very sure that with peaches selling at two dollars a basket, we should never have bought ten baskets. They cost us the time spent in picking them, plus a little time spent in caring for the trees.

Even if we could have bought a like quantity of fruit, it would not have been so good as the fruit we grew ourselves. All fruits gain markedly in quality the last few days on the trees. To be at their best they should, with the exception of pears, become dead ripe before picking. We picked over our peach trees each day for a week or more, taking only those that were dead ripe. The result was the maximum of sugar content and general deliciousness. Commercial peaches must be picked while they are still hard and firm—in short, before they are fully ripe.

They become mellow, but never attain the maximum of quality. By having food trees at home, one can allow all fruits to attain this maximum.

Surely, when one can gain an equally beautiful effect and secure a product of great cash value by choosing productive rather than purely ornamental trees, it is the part of wisdom to include such plantings in the home grounds. And my own opinion is that productive trees inherently possess an air of domesticity that no merely ornamental tree ever has. Hence it is better art, better landscaping, to use the productive tree, for it "belongs" with the house. It is the vine and the fig tree that the Scriptures picture as part of the homestead, rather than the cedar of Lebanon. If we are wise, we shall bear these matters in mind when we choose the means to our end in our landscaping.

POPPIES

Rose Seelye-Miller

My heart burned hot, and my eyes saw red,
For the martyred boys of the Flanders dead.
So, to keep the fires of hatred hot,
With poppies I planted a garden spot.
The seed had come from a blood-red field,
Blood-red poppies its only yield.
I looked for a blaze and a flaming glow,
But lo! the poppies bloomed white as snow!
Thoughtful, I gathered them for my dead;
Snow-white poppies, not flaming red!
Love whispered: "The whiteness of soul has bloomed.
The boys we loved are no more entombed.
They need no poppies to make them sleep,
Who have waked to a life more broad and deep."
I burned the poppies and now instead,
Heart's-ease grows in my garden bed.



Moose-Calling

By FRANK HERBERT SWEET

FROM early in September, on through several months, is the time for moose-calling. The moose is then in his prime, and the great palmated horns, which have been growing rapidly during the summer, are firm as a rock, and the hitherto-protecting covering

less impressions in the swamps, by the sides of lakes, on the mossy bogs, and even across the mellow sward of the upland. The air is crisp and bracing, and the long autumnal nights of the hitherto-silent woods now resound with the plaintive call of the cow, the grunting response of her mate, and the crashing of dead trees, as the horns are rapidly drawn across them to overawe an approaching rival.

This call of the cow moose is imitated by the Indian hunter through a trumpet made of birch bark rolled up in the form of a cone, about two feet in length, and the deceit is generally tried out by moonlight or early in the morning, in the twilight preceding sunrise, seldom after.

Few white hunters have become skillful enough to palm off this strange deceit upon an animal so cautious and possessing such exquisite senses as the moose. It is a gift of the Indian, whose soft, well-modulated voice can imitate the call of nearly every denizen of the forest. Secreting himself behind a sheltering clump of bushes or rocks, on the edge of the forest barren, on some favorable night in late fall, when the moon is near its full and not a breath of wind stirs the foliage, the hunter utters the plaintive call to the monarch of the forest. The weird, startling sound reverberates through the woods and across the marshes and as its echoes die away the hunter drops his birchen trumpet in the bushes and assumes an attitude of intense listening. Ten, fifteen minutes pass; then, if there is no response, he ascends a small tree, so as to give a greater range to the sound, and again sends his wild call pealing through the woods. Again he waits and listens, and presently a low grunt, quickly repeated, comes from over some distant hill, and snapping branches and rustling leaves herald the approach of the bull moose. Then, perhaps, there is another pause—not a sound to be heard for some time.

The hunter, now doubly careful, knowing that his voice is criticised by the exquisite ear of the animal, kneels down, and thrusting the mouth of his "call" into the bushes close to the ground, gives expression to a lower and more plaintive sound, intending to convey the idea of impatience. This may have the desired effect; an answer is given, the snapping of branches is resumed, and presently the moose stalks into the middle of the moonlit barren, in the age-old response to the call of a mate; or he may warily skirt its sides in the direction of the sound and, not being entirely convinced, bound away into the depths of the forest.



Photograph by William Thompson.

THE HUNTER UTTERS THE PLAINTIVE CALL TO THE
MONARCH OF THE FOREST

of velvet-like skin has shriveled up and disappeared, much rubbing against stumps and branches leaving the tines sharp and smooth.

At this season the moose is a great Rambler, and where a few months before his presence would only be indicated by an occasional track, there are now count-



TRAGEDIES OF A FLORIDA ROADSIDE

By RILEY M. FLETCHER BERRY

IN THE days when Spaniards, Indians, Englishmen and Frenchmen were weaving the romance and the tragedy of what is now Florida's brilliantly picturesque past, there stood north of New Smyrna, Florida, moss-draped oaks which began life far back in the early history of the peninsula. These great trees, with their majestic grace, seemed singularly well placed, standing as they did in later years, even down to a few months ago, beside the ancient road which was once literally The King's Highway. They made that road unrivalled for beauty—a picture once seen never to be forgotten. Yet these trees, with the unreplaceable magnificence of centuries upon them, were felled recently in order to widen the road. Where forest kings once clasped hands in royal greeting across the highway, it now lies open to the sky.

It is futile to cry "Oh, forget it! Just go and plant more trees." Nothing can ever take their place. More trees indeed may be planted and in the course of centuries they too may clasp hands across the highway, but since the reproduction of trees, in form and beauty, is as delicate as that of human beings, one could neither vouch for their equality in symmetry, grace and majesty nor their duplication in historical association of those which have been sacrificed.

This unfortunate destruction took place before many of New Smyrna's people knew of it or dreamed that it was even being considered. Some of us who did know were utterly helpless in trying to prevent the destruction. It is one of the tragically hopeless features of such desecration that so many who have the laying out and building of roads today are quite callous concerning the saving of trees, thinking principally of the motorists who rush madly along the highways.

Tallahassee, sitting serenely upon its gently rolling hills, far toward the northwestern boundary of the state, beguiles by its beauty and fastens forever its lure upon those who linger and breathe its atmosphere, for one

of its chief charms is its wonderful, tree-bordered roads. Here the traveller is gradually led into a realm of enchantment when passing under the trees which form an arch across the Tallahassee trails. The word "trails" is not used merely for alliterative purposes but because two historic trails, the Old Spanish Trail and The Dixie Highway, actually do wind to the capitol of this land of dreams. Besides these there are many woods trails unknown to the motorist, where one revels in romance.

The forest beauty on either side of the Old Spanish Trail, which lies between Tallahassee and Thomasville, Georgia, is beyond description. So potent is the spell cast over a visitor who passes under its graceful arches, that he cannot credit the report of road-widening plans which involve the destruction of these wayside sentinels, ignoring their centuries of service and their priceless charm; and yet this is just what Tallahassee has planned and done in spite of its big-hearted Mayor, Guyte P. McCord.

Mayor McCord's repeated protests, through newspaper and petition, and in verbal appeal to the people of Tallahassee and Leon County, have been in vain. A few have supported him in the stand he has taken but the majority have been either indifferent to the fate of the trees, unmindful of their historical value as an asset to the county, or else have actively favored their destruction, quoting the speeder's chronic cry—"Safety first."

Yes, safety *should be first*. Attention to it is made doubly necessary because of speeders. But one does not need to lose sight of other values to insure safety upon our highways. Especially is this the case in the ruthless destruction of those forest friends that add to the beauty of the landscape or shield us from the sun and shower, or, as in the case of the Old Spanish Trail, are steeped in the romance of the centuries. It is *motorists*, not trees and roads, which primarily require attention. They are too apt to ignore their own responsibility in calling for "safety first."

As a matter of fact, on this Tallahassee end of the Old Spanish Trail there was plenty of room for two vehicles—even for hay wagons—to pass at a reasonable rate of motion. The addition of a new, firm, hard-surface road-bed would have insured comfort and safety to motorists and still have obviated any necessity for destroying those green and fairy-filagreed arches. The speeder, however, is not concerned with moderation. Curves that lend beauty to the landscape, even curves crowned with enchanting forest fringes, mean nothing to him—except perhaps a source of irritation, for curves mean a slight slowing-up. A straight road, a wide road for him and his foot on the gas!

A specific difficulty in regard to Tallahassee was the fact that although possessing unlimited commercial possibilities, these are only in the process of development and hoping to capitalize on her natural wealth, she invoked Federal aid. Federal aid has been the salvation



Photographs by Van de Sande, permission Sunland Magazine.

CATHEDRAL ARCHES

Lining the King's Highway, near New Smyrna, this majestic beauty was destroyed in the name of road "improvement."



WHERE THE CATHEDRAL OAKS ONCE STOOD

The shoulders—bare and bald of beauty—show how cruelly bereft a spot this bit of road now is.

of many individuals and communities, but when invoked without due consideration beforehand, or without realization of what Federal road regulations may require, such aid may mean the destruction of some of nature's shrines to beauty. This is not the fault of Federal road regulations so much as it is the ignorance and apathy of those who are seeking the aid.

Mayor McCord believed this bit of the Old Spanish Trail should and could be saved, but even a most able and progressive mayor is powerless without moral support, at least, of

local public opinion. A little waiting and adjustment, and then judicious and united appeal for State aid would undoubtedly save to many communities what no one has a moral right hastily and hopelessly to destroy.

With planning and forethought, how easy it is to avoid these arboreal highway robberies perpetrated in

stowed, and now Seminole County, although the smallest county in Florida, has to its credit more public parks than any other county in the State. In addition to county parks, it has four parks within the limits of its county seat, Sanford. Seminole County people, however, are not merely theoretical idealists. They have led the state in practical road improvements, both in miles and quality. Best of all, this county has proven that good roads do not mean butchered beauty, for it has also led in appreciation of the forest friends who guard her highways.



A WOODS TRAIL

Such winding roads, unknown to motor travel, are a priceless part of Florida's forest beauty—highways to enchantment and romance.

the name of road "improvements." There is Seminole County, Florida, with its beautiful strip of hammock along the Dixie Highway. Three years ago it was threatened with destruction. Indeed, wood choppers had already begun to clear it when, through the generosity of a little group of men, including Senator M. O. Overstreet, and John Meisch, a public-spirited citizen of Sanford, nearly twelve acres, including a lovely spring along the highway, were saved. This movement was initiated by the Woman's Club of Sanford and the club was made the beneficiary. This gift led to others of a similar nature until nine public parks in all have been be-

Autumn Woods

Where the pine trees, garbed for winter
In a deeper, richer green,
Stand like great protecting sentries
All the flaming woods between;
Where, in wild profusion scattered
Nature throws, with lavish hand,
All her golden store of treasures
Making sunshine in the land;

Where the chestnuts, thickly scattered,
Tempt the squirrel from his lair,
And the frosty breath of autumn
Ingles through the ambient air;
Where the russet of the oak tree
Colors like the partridge breast
And the maples' redd'ning glory
Vainly mocks the pheasant's crest;

All the silent forests echo
To the songs of yesteryear;
While the sighing of the pine trees
Breathes a magic music clear,—
Echoes of the springtime carols—
Echoes of the billows' song—
And the murm'rous plaint of wood-nymphs
On its wings seem borne along.

Down the pine-cathedral arches
Hushed the feathered songsters' mirth;
Tranquil lie the woodland reaches—
Autumn peace broods o'er the earth.
For the southern skies are calling
And the birds go faring forth,
Fleeing from the breath of winter—
Fleeing from the frosty north.

And the woods are calling, calling—
"Come and leave the busy mart;
Autumn revels are in order!
Come, commune with Nature's heart!"
All the gladsome woods are calling,—
Beck'ning us, with tones of cheer;
Colorful, in speechless music,—
For the autumn-time is here!

—Florence Nickerson Houdlette.

Vagaries of the Wild Fig—The “Cuckoo” of the Forest

By C. J. BLANCHARD

(Photographs by Seaboard Air Line Railway)

ONE of the most interesting of the numerous forms of plant life in the south is the Wild Fig *Ficus Aurea*. Its life cycle is somewhat evolu-

its top. Aerial roots descend from many parts and some of them have become interlocked with the remnants of an old farm wagon, only the front wheels of which now re-

main. Up to a short time ago the axle was firmly held by the tree now growing between the wheels. Slowly, but surely, the fig is squeezing out the life of the oak which, dying, furnishes food for its destroyer.

Near Indiantown, Florida, a plantation owner has made use of the wild fig to produce a unique gateway. Cuttings of the fig were set in each of the cypress posts a number of years ago. They have flourished mightily and now completely envelop both posts.



THE OAK COMPLETELY GARROTED

tionary, for it starts as a parasite on the trunks of other trees, sending out smooth tentacles from which descend aerial roots. When these penetrate the soil and gather sustenance they become trees and attain a height of 20 meters or more.

An unusual example of the vigor, tenacity and strength of this plant is shown in one of the illustrations herewith, which was found near Miami, Florida. Here the wild fig is seen attached to a huge oak. At the base of the oak the tentacles of the fig are in a great mass, resembling somewhat the body of a mighty octopus, the resemblance being further carried out by the smooth stems of the fig which enfold the oak clear to



A FIG GATEWAY, SET IN CYPRESS POSTS



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FAMOUS OLD LOGGING CAMP BALLADS

FROM Michigan comes this contribution to the balladry of the Shanty Boy and, because of its vivid pathos and humor, it is held by many to be the gem of the collection. Though written in the first person singular, there is serious doubt that "Jack Haggerty" himself wrote, or even sung, this ballad—his own sad story of unrequited love and the faithlessness of women.

By FRANZ RICKABY

VI. Jack Haggerty's Flat River Girl

WHEN it comes to a consideration of Michigan's chief contribution to America's woods songs, the ballad of Jack Haggerty and his calamitous love affair, one could, as the saying goes, talk all day. . .

A number of years ago, just after I had decided that the songs of the shanty-boy were worth saving from oblivion, I was visiting one evening in Charlevoix, Michigan, with Mr. Will Dougherty, who had spent a number of years in the camps of that country. "I'll tell you," he said, "there's one song you want to get. It ends up—'And whenever you see one with dark chestnut curls, Just remember Jack Haggerty and his Flat River Girl'." I took his word for it then, but have agreed with him many times since, for *Jack Haggerty's Flat River Girl* (sometimes called *The Flat River Girl*, but most often merely *Jack Haggerty*) is one of the most interesting old ballads that the collector will find.

Some of this interest grows from the fact that Greenville and the Flat River actually exist over in Lower Michigan, and that Jack Haggerty is remembered by men still living. Many people in the Flat River country claim also to have known the fickle heroine.

By its wording this ballad purports to be autobiographical, but this cannot be taken as clear evidence of Jack's having actually composed the verses himself; for many ballads which are pretty definitely known *not* to have been composed by the character supposed to be speaking, are in the first person singular. The first person is frequently used for vivid and realistic effect. There is, however, nothing in such report as I have of Jack's personality that would necessarily bar him from authorship. From Mr. C. L. Clark, a citizen of Greenville, I have learned that our hero was what might be

called a gentleman lumberjack. "He was not quite so rough" (said Mr. Clark) "as most of those birds and was a little more dressy. And he wasn't very strong on fighting. He is supposed to have died about 1915." The version of the ballad which Mr. Clark secured and sent me, the one reprinted herewith, was signed, "As written and sung by Jack Haggerty," not in Mr. Clark's handwriting, however.

But this much we know: by 1873 the story was sung by thousands of men on the Flat River, which flows through Greenville, and on the Big Muskegon, and by farm girls throughout the countryside. It became a prime favorite through all the white pine country. The sailors on the Lakes sang it; in one instance I was given to understand that Jack had his eyes opened in later life and became a Great Lakes sailor himself! Mr. Art Milloy, of Omemee, North Dakota, whose melody I reproduce here, learned the ballad in Ontario, Canada, before 1880.

Another source of the positive fascination which this ballad has (for the collector at least) is the astonishing variation which occurs in some of the lines of different versions. The story always remains unchanged, but some of the expressions have been manhandled. Line two of the first stanza, for instance, has been given me "My usual departure, alas, I detain," which means—well, you say! Another version relates that it was "a dartsman of cubic" who caused Jack much grief. This ominous gentleman kept me guessing for a long while. I thought he was someone from Quebec. Again, some shanty-boy did not have "asunder" in his vocabulary, and his heart accordingly became "a broken cinder." In the expression "shops, bars, and households" the average shanty-

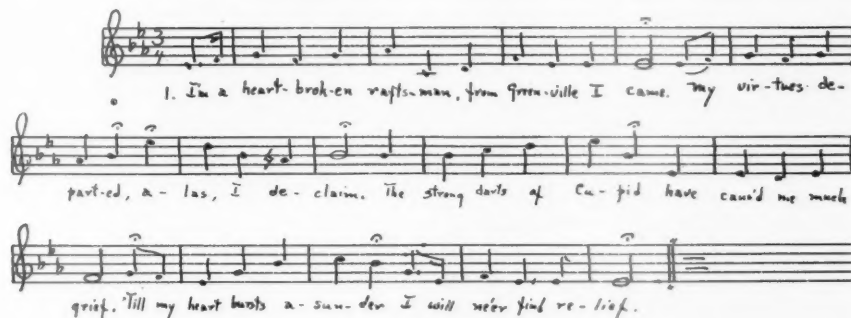
boy found two localities mentioned with which he was not very well acquainted. The territory of Jack's fame therefore becomes variously described: usually as "ball-rooms and dance-halls" or "bar-rooms and dance-halls;" once as two small towns on the Flat River; and once as "shabbers and housetops," which again is not overlaid with clarity. "To her mother, Jane Tucker" sometimes becomes "her mother Jane took her." And so on through a host of lesser variations.

The usual versions of this ballad are six, seven, or eight stanzas in length. I reprint here the stanzas given me by Mr. Clark, and the melody used by Mr. Milloy, because these stanzas, while perhaps not as they were in the original, are close to that; and Mr. Milloy's melody is the most effective one I have found for this ballad.

As in the case of *Gerry's Rocks*, this ballad, so far as I have seen, maintains allegiance to one melody only, though that melody varies of course with different singers and in different localities. The usual folk-version of the ballad may be made by omitting stanzas 4, 5, 9, 11, 13, and the two middle lines of stanza 7. I do not believe stanza 13 was in the original; stanza 12 is the logical close of the story.

The six-line stanza, which appears twice in the version here given, though probably not present in the original, is common in folk-versions of ballads generally. Sometimes stanzas of five lines, or three, or two, also occur. The melody is cut, or part of it repeated, to take care of such irregularities; in the present case the latter half of the melody is repeated to accommodate the extra lines.

Jack Haggerty's Flat River Girl



1. I'm a heart-broken raftsmen, from Greenville I came.
My virtues departed, alas, I declaim.
The strong darts of cupid have caused me much grief,
Till my heart bursts asunder I will ne'er find relief.
2. By occupation I'm a raftsmen where the Flat River rolls;
My name is engraved on its rocks, sands, and shoals.
In shops, bars, and households I'm very well known;
They call me Jack Haggerty, the pride of the town.
3. I'll tell you my trouble without much delay,
How a sweet little lassie my heart stole away.
She was a blacksmith's daughter from the Flat River side,
And I always intended to make her my bride.
4. Her face was as fair as the rose on the lea;
Her eyes they resembled the calm smiling sea.
Her skin was as white as the lilies of Spain,
Or the wings of the seagull as he skims o'er the main.
5. Her form like the dove was so slender and neat;
Her hair hung in ringlets to her tiny white feet.
Her voice was like music, or the sigh of the breeze,
As she whispered she loved me as we strolled through the trees.
I thought her my darling,—what a gem for a wife!
When I think of her treachery it near takes my life.
6. I worked on the river, I earned quite a stake;
I was steadfast and steady and ne'er played the rake.
But buoyant and happy on the boiling white stream,
My thoughts were of Annie, she haunted my dreams.
7. I would have dressed her in jewels and the finest of lace,
In the choicest of muslins her form would embrace.
I thought not of sorrow or trouble or gloom,
My heart light and happy as the rays of the moon.
I gave her my wages the same to keep safe;
I begrudged her of nothing I had on this earth.
8. One day on the river a letter I received.
She said from her promise herself she'd relieved.
My brain whirled with anguish, it near drove me mad.
My courage all left me, I wished myself dead.
9. I have no doubt this letter will cause you surprise,
And for disappointment must apologize.
My marriage to another I've a long time delayed,
And the next time you see me I shall ne'er be a maid.
10. To her mother, Jane Tucker, I lay all the blame.
She caused her to leave me and blacken my name.
She cast off the rigging that God would soon tie,
And left me a wanderer until the day that I die.
11. I will bid farewell to virtues divine.
I'll live in debauchery—fast women, and wine.
I'll leave Flat River, there I ne'er can find rest;
I'll shoulder my peavy and start for the west.
12. Come all you young fellows with hearts brave and true,
Don't believe in a woman: you're beat if you do.
But if ever you see one with a brown chestnut curl,
Just think of Jack Haggerty and his Flat River girl.
13. Now my song it is ended, I hope it's pleased all.
I sail in a packet that sails from Whitehall.
The canvas is hoisted, and the wind blowing free,
As over the ocean sails Jack Haggerty.

FOREST

PEOPLE

Sessoms, of Cogdell, Demonstrates "Forestry in the Making"

By AUSTIN CARY

THE "forest people" of this magazine have often been much besides, and so it is with Mr. A. K. Sessoms, of Cogdell, Georgia. The wholesale grocery business is the one he says he really knows,—that was the one in which he started at any rate. Also, he has farmed, raised cattle largely, built forty miles of railroad, and organized and been main owner of a ranch in Mexico.

These things disclose a man of stirring disposition and those wise in the ways of humankind might suspect an element of uneasiness and changeability. A little understanding of the results of ventures in these other fields, however, will go far to explain why Mr. Sessoms is now a convinced and apparently permanent member of the timber-growing fraternity.

Take the ranch in Mexico, for instance. Ten years ago that was a thing for a man to take pride in—as big as a southern county, stocked with cattle and horses and profitable. But the fighting factions in the troublous times cleaned out his stock and later the government took the land away under the guise of taxation, whereby Mr. Sessoms learned, once for all for him, the advantages of a stable and law-abiding country in which to do business.

The wholesale-grocery business which Mr. Sessoms started is a successful going concern today, but not under his management; kinship for the out-of-doors is probably the real reason why he let it go. Farming and stock-raising have been engaged in of late years on the home property, as great cleared fields, silos, and extensive fenced areas testify, but the main and central fact is that after much experience Mr. Sessoms has concluded that in Southeastern Georgia these are at least precarious lines of enterprise and that in timber operation and timber growing lies a better future.

Among other assets which the Sessoms of the generation preceding handed on to his heirs were some 40,000 acres of "flatwoods" land west of Waycross, Georgia. It had been milled over and was supposed to be at its end from the timber standpoint. The heirs, accepting



A. K. SESSOMS, WHO IS MAKING
LAND GROW TIMBER. THE AU-
THOR STANDS AT HIS LEFT.

that view, put it on the market at \$2.50 an acre. It did not move and after a year or two A. K., the oldest son, concluded that he had better look into it. What he then found pleased, and also surprised him. A careful examination disclosed numerous bodies of virgin timber, pine and cypress, passed by in the earlier operations because on somewhat difficult, swampy ground. Then there was a lot of undersized, cull stuff scattered all about, together with considerable bodies of second growth chiefly in the wetter places. Also at the time the agricultural and grazing possibilities looked attractive. The Sessoms of the present day, therefore, concluded to settle down on the property.

So Cogdell arose in the middle of that tract—no imposing town even now, but a group of dwellings of various grades, a turpentine still, a store or commissary, a community school, modest churches for the white and colored people. Here the Sessoms family, which includes now five young children lives,—self-contained, modestly prosperous, hospitable. And on the business side Mr. Sessoms has been stirring during the years, running his various enterprises and acquiring more land, including the share of his brothers and sisters in the original holdings, until now he and those immediately connected with him own a body of 70,000 acres. Early in the enterprise he built a railroad from Waycross through the

long dimension of the property that carries the products of his own and some other territory.

Forestry of the early years naturally and rightly was utilization. A sawmill was brought to Cogdell that cut the best of the remaining mature timber, while tie and pole operations picked up the odds and ends. The wood lying on the ground, fat in pitch after lying for years and under the influence of the prevailing fires, was shipped to nearby fuel markets and the big extracting plant at Brunswick. These operations brought in revenue, used for living purposes and for the acquisition of more land. Later,—five years ago now,—a turpentine operation was inaugurated with volunteer second growth on the property its chief basis.

So far so good, but an end some time comes to that sort of thing. What of continuance and of the future?

Mr. Sessoms, like many other ordinarily wise men, was open-minded to this idea and had reasonably good opportunities to absorb it, but the determining, directive stimulus, as has so often been the case, came by accident.

To understand that we must revert to his cattle business. To help get rid of the ticks and control the cattle to advantage, Mr. Sessoms several years ago fenced up some 14,000 acres of his property. That kept other people's stock off and with it the local practice ceased of firing the land every winter. Up to two years ago no other measure of fire control was practiced.

One day in the fall of 1922 Mr. Sessoms on a ride

through his pastures, was struck by the amount of young slash pine reproduction which was taking possession of the land—not spots of it but big areas, bordering the belts of swamp timber and covering the mostly vacant stretches of intervening upland.

It looked good to him, knee high at two years of age, 6 to 9 feet when two years older, with scattering larger trees showing a height growth of 3 feet yearly. Here was growing power, and at a rate to be carefully reckoned with. At 15 years of age those little trees would be fair turpentine timber; at 30 or 40 years, fair sized sawlogs. And to the owner of the land what a prospect they opened up! His turpentine operation, with 20 years' timber now in sight, need never stop; in fact, if enough of that young growth could be had, it eventually could be greatly expanded. And then saw timber, that commodity of which the experts tell us the American people shortly are going to stand greatly in need—why should not American naval stores operations be so conducted as to yield a profit and at the same time produce finally a crop of timber as for many years has been done in France?

Here was forestry in the making, for today Mr. Sessoms' operation is on this basis and a pioneer in its field. In the intervening years Mr. Sessoms has taken special precautions to protect his young pine from fire. Thinning, also, needed because young growth as it comes is usually too dense for best development, has been



Courtesy Seaboard Air Line Railway.

WHAT MAY BE SEEN FOR MILES AND MILES AS ONE RIDES OVER MR. SESSOM'S PROPERTY. WITH ONLY FIFTEEN YEARS AHEAD BEFORE TURPENTINING AND ABOUT THIRTY TO THE HARVESTING OF A HEAVY CROP OF TIMBER, WHAT BETTER FINANCIAL PROPOSITION IS OPEN IN THE UNITED STATES TODAY THAN STARTING AND LOOKING AFTER JUST SUCH FORESTS?

started on a small scale. Then in the summer of 1924 Mr. Sessoms went over to France with a group of naval stores men from Georgia and Florida to learn what he could from the French woods and forest management, coming back with ideas that he thinks will be of great value to him. His intention is in the development of his new project to adopt every clearly profitable and promising measure.

"Acres of Diamonds"—there is much in the train of events and circumstances indicated above to suggest that vastly instructive story. More immediately and prosaically; forestry in the making is the main thing illustrated

—actual, profitable, American forestry. That is a thing that will go, propagate itself because it genuinely attracts and rewards, and at the same time it will meet the necessities of this country more largely than any other measure. As for the means to it, foreign countries and stored-up experience may teach us much, but the greater portion, on the other hand, is simple, calling only for clear observation and judgment. With such qualifications, men of Mr. Sessom's training are probably as well equipped as those of any other, while they are so situated as to apply them directly and in a large way.



The Stockmen's Claim to Uncle Sam's Forage

AT a joint meeting of the National Woolgrowers' Association and the American National Livestock Association, held at Salt Lake City, August 24 and 25, and attended by two hundred stockmen from eleven western states, definite recommendations were adopted for the grazing of livestock on the National Forests and the public domain. The meeting was held just prior to the public hearing in Salt Lake City of the Special Senate Committee on Public Lands, which has been investigating the grazing question during the summer, and the recommendations were presented to this committee as representing the stockmen's claim to grazing rights on more than 275,000,000 acres of publicly-owned lands in the West. The recommendations are as follows:

NATIONAL FORESTS

1. That by law there be a recognition, definition, and protection of rights to grazing upon National Forest ranges upon an area basis.

2. That such rights shall be based upon established priority and preference at the time of the enactment of the law.

3. That such rights be definite and transferable, without penalty with provision for egress and ingress from and to ranges, and subject to provisions necessary for the protection of other resources of the National Forests.

4. That the holders of such rights shall be responsible for wilful damage done by them to resources of the forests.

5. That the exercise of such rights shall be such as will insure the beneficial use of the grazing resources as considered from the standpoint of general business welfare. We favor equitable protection to communities, to the small farmer and stock raiser, to the wild life, and to recreational facilities.

6. That no charge basis shall be made effective in such law which results in depreciating investment values in the privately owned dependent properties of the holders of such rights, and that provision be made for returning whatever amounts are collected for grazing to the state.

7. It is the consensus of opinion that the Rachford report is based upon unsound economic principles and therefore should not be adopted.

8. Having adopted our recommendations as above, it must

naturally follow that any contested point arising between holders of rights and the Government can finally be taken to the United States District court.

PUBLIC DOMAIN

The condition of the various sections of the Public Domain in different states is so varied and often opposite that no definite and complete blanket can be formulated that will equitably and effectively apply to all states, and therefore we recommend to the Public Lands Committee that—

1. Its hearings in the various states must of necessity largely determine the scope and detail of such a plan or plans as properly may be formulated for the different states and make effective such legislation as seems necessary, if any, for a solution of the Public Domain problem.

2. That any principles underlying a grazing use of the Public Domain must recognize:

(a) The necessity for definiteness of control in the operator.

(b) A charge basis which does not depreciate investment values in privately owned properties dependent upon the use of such ranges.

(c) That priority and use shall be the general basis of the granting of right to occupy such ranges.

3. That preceding any application of any law to this problem, the public domain should be classified as to its proper use with reference to the best economic development and benefit to the general public.

4. Any law enacted covering this matter should be based upon the principle of local option in states or grazing districts.

NATIONAL PARKS AND FEDERAL GAME PRESERVES

That there be no further extension to present National Parks and that no new parks or Federal Game Preserves be created in the states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming.

The Special Public Lands Committee, of the United States Senate, completed its hearings in Albuquerque on October 7 and 8. In the course of its investigations during the summer, the committee held hearings in practically all of the western states, and as a result has gathered a great mass of material from which it is expected its report to Congress will be prepared.



EDITORIAL

Stockmen Would Quarter the National Forests

WESTERN stockmen, two hundred strong, gathered in Salt Lake City late in August and told the Senate Public Lands Committee how, by a few simple passes of the legislative wand, the National Forest ranges of the West should be parceled out to the grazing interests. Their proposals, printed on the opposite page, abundantly bear out the statement made by The American Forestry Association two months ago that certain western stockmen were organizing to break down the integrity of the National Forests. To the superficial reader, their proposals now made public may appear innocent enough, but analyzed in terms of privileges to be granted by law they would virtually bring ninety million acres of Uncle Sam's forests under the dominion of a few powerful stockmen.

This is a broad assertion. Let us, therefore, look at their specific proposals. The very first one calls for a law that will establish individual grazing rights on the National Forests "upon an area basis." This means that the present method followed by the Forest Service of specifying the number of stock which each permittee may graze on the forest ranges would be done away with, and that the land area of the National Forests would be divided up. With each allotment or subdivision, a vested right to the forage thereon would be doled out by Uncle Sam to specifically-named individuals.

To whom is the Government to give these valuable rights? This question is answered by the second proposal of the stockmen, namely, that such rights should be based on prior use of the range at the time of the enactment of the law. In other words, the stockmen who are now grazing on the National Forests under yearly or term permits from the Government, would receive a property right to the forage on specified areas. The third proposal would complete the trinity of monopoly by providing that these grazing rights "be definite and transferable without penalty."

Fine for the stockman whose prior use of the forest range qualifies him for one of these valuable rights! The area involved may be only a few hundred acres, or it may be several thousand acres, but the forage thereon is his "to have and to hold" as long as he so wills. But

how about the settler whom the Forest Service, in pursuance of Roosevelt's policy of administering the National Forests for the greatest good of the greatest number, is now taking care of by gradually reducing the permits of the large owners. He would be out in the cold, so far as building up a small herd of stock to make his farm pay out is concerned. To be sure, he might be able financially to "pay the price" and buy a grazing right on the National Forests from a neighbor or from a dealer in this new form of invisible real estate. For under the system proposed by the stockmen, it is not difficult to foresee a fine speculative business in the buying and selling of grazing rights in Uncle Sam's forests. These rights would be almost as valuable as the land itself. For it is not difficult to foresee the big grazing interests quietly and systematically buying up grazing rights from the little men and blocking up the grazing control of ninety million acres of the people's forests until a few powerful cattle and sheep outfits would have a monopoly hold that would make forest administration subservient to cows and sheep instead of to trees and water.

The remaining proposals of the stockmen seem to have been thrown in to palliate the first three. One of them concedes that the holders of grazing rights should have some small degree of public responsibility. Sheep and goats and cattle are no respectors of young trees or ground cover that conserve the water supply, or of roads and trails, or of beautiful recreational areas. Their appetite for food is predominant. Little they care if, after them, comes winter starvation for elk, deer and other wild life. Their herders might start forest fires, as they often do, and thousands of acres might be reduced to black devastation. Yes, any or all of these things might happen, but, say the stockmen, we shall not be held responsible for any damage done to the public's property unless it can be proven to have been wilfully done. And as a special palliative to the western people, they would have the Government turn over "whatever amounts are collected for grazing to the States" in which the Forests are located, after it has fixed fees on a basis which will not result "in depreciating investment values in the privately

owned dependent properties of the holders of such (grazing) rights."

Think of it. A property right to forage on ninety million acres of Uncle Sam's woodlot—an area three times the size of all New England—no land taxes to pay, no cost of range upkeep, no limits on the buying and selling of range rights, no limit on range monopoly, excepting what money can not buy, and lastly no responsibility for damage done to forest growth, to water conservation, to wild life, or to public property, excepting as Uncle Sam's lawyers can prove by expensive and long-drawn-out court action to have been wilfully done.

The stockmen's proposals are preposterous. They appear to have been dominated by the theory that "God helps those who help themselves." We are glad to learn, however, that they do not represent the common view of western stockmen, but rather the view of a minority which includes most of the large and powerful stock outfits. It is unfortunate that the grazing indus-

try in the West has fallen under the spell of these desperate leaders, who appear determined to take forage out of the conservation program of the Government, even though it wrecks the administration of the National Forests. By such proposals as they have advanced they are courting an aroused public opinion that may sweep them and their flocks out of the National Forests altogether, for the people of this country will not tolerate their greatest remaining natural resource being periodically menaced by a small band of conspiring stockmen. This would be unfortunate both for the grazing industry and the public, because grazing, properly regulated and controlled by the Government, is a legitimate use of the National Forests. But the radical leaders of the western stockmen have drawn the lines of battle,—a battle that will be shot through with political intrigue—and The American Forestry Association, for one, will not stack its arms until the fight has been won to the public.

Forestry and the Federal Budget

TWO activities of tremendous importance to the progress of forestry in the United States are reported in this issue of AMERICAN FORESTS AND FOREST LIFE. One is the hearing which was held before the Director of the Budget on September 28 in behalf of larger appropriations with which to make the new Clarke-McNary Forestry Act more fully operative. The other, ably discussed in Colonel Graves' article on page 675, is the danger arising from growing opposition in some sections of the country to the co-operative principle of federal appropriations.

Both of these situations vitally affect the future stability of the Clarke-McNary Act upon which the beginning of a broad national forest policy has been built. Many years of earnest and untiring work were required to bring about the passage of this Act. It is based upon the principle of cooperation between the Federal Government and the states, and a public sentiment antagonistic to that principle is a real threat to the whole structure of the Act. The greatest danger from this source comes from the failure of many people to appreciate that forestry is a national problem of such magnitude that the national Government, no less than the states, is obligated to assume its share of the task.

One of the most impressive pictures of the nation's forest situation today, and the extent to which it has become a national problem appears on page 645 of this issue. This map brings out more graphically than any we have yet seen our national deformity in forest growth. As Colonel Graves points out in his article, federal leadership of a cooperative character is fundamental, otherwise the theory of an American forest policy, built upon the cooperative principle, must fail. Such an event would be a tremendous setback to forestry in the United States, and the situation is one which we believe calls for a maximum of educational

effort on the part of forest advocates, to the end that public opinion may be soundly clarified.

That federal leadership in cooperative forest activities now falls short of the mark was ably pointed out at the hearing before the Director of the Budget. The cause, of course, is the meager appropriations with which the Government is attempting to put the new forestry act into operation. The two most important features of this act—fire prevention and forest reconstruction in the East—are not being adequately provided for, and in the picture of 92,000 forest fires last year, with 28,000,000 acres burned over, the Government is not seen at its best nor as an adequate leader in building up a great nation-wide protective force. There is no lack of ability on the part of the Forest Service, but rather the lack comes from inability to face the unquestioned financial needs of federal leadership and forest fire prevention. There is no economy in letting our forests burn up when by a small expenditure today the high cost of replacing them tomorrow can be saved. At a recent meeting of the American Forest Week Committee, Ex-Governor Frank O. Lowden expressed a sentiment which we wish could capture every mind. He said he hoped that the day would soon come when the American nation would rate its wealth not by money in its banks, but by the natural resources within its boundaries.

It is to be profoundly hoped that when the Bureau of the Budget and the Forest Service meet with a view toward its expenditures for the coming year, the forests of America will be rightly balanced with roads, harbors, battle ships, public buildings and other important items, and that they will be given their full due in the new budget. Anything short of this is buying tax reduction at too great a cost.



A Sportsman at Heart

By R. F. McLAREN

FOR thirty-five years, as a member of various Rod and Gun clubs, I have had an opportunity to observe how strictly sportsmen, in general, comply with the fish and game laws, under trying circumstances.

Living over, in retrospect, many enjoyable and instructive outings with young, middle-aged, and older men, some of whom later became famous in the art of trap-shooting (although I never did better than 94), I do not hesitate to say that these associates, these companions of the paddle by day and the camp by night, embraced a class of men as honorable and as fair-minded (square-shooters, if you please), as any one could wish to meet.

Observance of the laws, is, or should be, the first prerequisite to membership in all Rod and Gun clubs. A sportsman at heart will not knowingly kill a bird out of season; fish with a seine in prohibited waters, or resort to any unfair method of capture, even though not specifically prohibited by law, which might, perhaps, be looked upon with disfavor by other members of his party; but, I think it is safe to say that not one of us has escaped the thrill of "exposure" to a technical violation when a bunch of lazy mallards swung in, flying close to the water, a few minutes before sunrise; or taking a long chance on a lone teal beating the world's record for the shadow of the rushes, just before night-fall.

Then again, temptation lurks along the imaginary lines dividing two counties, in one of which the season on birds is open, but is closed in the other. One might stand, if he knew just where the line was, with one foot

in either county. He may legally shoot to the right, but to do so in the *opposite* direction would constitute a violation of the law. Would you, would I, would *any* of us, discriminate to that extent? And yet, such a situation presents a technical violation.

We all enjoy, when night comes, living over again the happenings of the day in the hills, recounting our experiences along the edges of the rice beds, on the riffles, or at the deep "holes" just below, and how uncomfortable one would feel if something had to be held back because it could not be told in the presence of true sportsmen! Such, however, is never the predicament of the thoroughbred.

There are, regrettably, and always *will* be wilful violations of the most commendable game legislation, which has for its object, first,—the propagation of wild animals and bird life, and second,—conservation of the keenest sport on earth.

In this section of the Rocky Mountain region, we have tried to protect the birds for a number of years. There was no open season in 1921 or '22. The birds multiplied to such an extent that ten days' open season was declared in the fall of 1923, and again in 1924, September 15th to 24th inclusive; limit five birds per man per day. It is upon the latter period that this story dwells; namely, September 24th, 1924, the last day of the season.

Early on the morning of that day, having made all preparations the night before, Dave and I left the Ranger Station, prepared for an all-day tramp; first, by circuitous trails to the summit of the Continental Divide, then fol-

lowing the ridges through alternating patches of snow in the basins, and over timbered knolls, whither we knew that the timid blue grouse had secreted themselves after the hunters' guns during the past nine days had scared them away from all lower levels.

Scarcely had we closed the door behind us, quite unprepared to shoot, except that our guns were loaded, when a willow grouse flushed within a few feet of us. Dave dropped his bag, containing shells and a small amount of lunch, raised his gun quickly and with a perfect motion swung on the bird and knocked it over when almost out of range. There was no need of packing it with us, so we "drew" it and hung it up in the root-cellar and closed and locked the door. After this little delay we were soon on our way again.

For the first hour and a half we made good time, considering that every foot of our travel was against the mountain grades. Higher and higher we went, and if I were to attempt to describe the gorgeous scenery, constantly changing with each elevation and from different view-points, I would have no space left for the incidents I want to relate. We were not looking for birds just then, but pushing ahead to the abode of the lordly blue grouse—higher up.

Dave, at this time, was following a trail somewhat to my right. I saw him stop, look intently at the ground, then stoop over until he was out of sight. In a moment he called to me, and standing erect, beckoned for me to come over. I found him examining the fresh tracks of a large bear. "These tracks are not more than an hour old" he said, "and maybe not that." The imprints of the huge feet were very plain in the sand—moistened from the overflow of a spring just above us. "That fellow," Dave explained, "has been out here this morning feeding on these choke-cherries" (of which there were plenty over-hanging the rocks), "and if we follow his tracks quietly, so as not to scare him, we may find him down in that thicket," indicating a spot probably a hundred yards away. The thought of the bear being "scared" had not occurred to me, and at that moment if there was no possibility of his being closer than a hundred yards—headed the other way and still moving, it was all right with me.

However, we were not hunting for bear at that season of the year, particularly with nothing heavier than 1½-6c, and when we had put several hundred more yards between us, my blood-pressure I will admit, was more nearly normal.

I knew that there were bear in that section—Dave had talked to me about it, but it makes a difference whether you discuss the subject in front of the fire-place, or on the firing-line, where the tracks are not more than an hour old, "and maybe not that."

It was well past noon when we met to eat our lunch beside a pond, lost in the dense under-growth, and not far from the top of the divide. If we didn't get a bird, or fire a shot on the whole trip, it was well worth the price of admission to rest in this secluded, magnificent spot, surrounded by giant pine trees, precipitous walls of sparkling granite and masses of fallen timber, listening to the trickling of water from numerous invisible springs that fed the glistening pool before us,—alone with nature—and the bear now at least three miles away.

When we separated after eating our sandwich and hard-boiled egg, we had one grouse; Dave got it a few minutes before coming up to where I was waiting for him. We were now in the grouse country, and from here on, our routes, while following the same general direction, were about half a mile apart—one on either side of the ridge. The next two hours would tell the story, and would bring us together again at a point agreed upon and understood, where the trail crossed the head-waters of Deer Creek. If you have ever hunted blue-grouse, you are aware that seldom, if ever, will the birds fly up-hill, when flushed—always to lower ground; consequently by reason of our position, one or the other would have a chance at the birds that would "get up" in the space that lay between us.

Apparently the grouse had not been much disturbed by hunters; the coveys appeared to be fairly well intact, and long before reaching our appointed meeting-place, I had my limit of five—with three inexcusable "misses." At intervals I heard Dave shoot—twice doubles, and felt reasonably sure that he, too, would be ready to hit the trail for home by the time we came together.

At five o'clock I neared the head-waters of Deer Creek, and at some distance sighted Dave's brown hunting coat and cap. When I came up he was sitting on a fallen tree, cap and coat on the ground beside him, with his gun resting against a stump at his left.

"What luck, Dave?" I called from speaking distance.

"Good" was his answer—"how about you?"

"Just right," I said.

"Well, that's fine—I have four nice ones—saw lots of them just above here."

"Why not five, Dave," I said, "haven't heard you shoot for quite a while?"

"Well," he said, "you know I got one this morning, and that makes five for me, in one day—the limit."

Without any desire to immortalize one who merely observes the law, even under trying circumstances, without further comment, I dedicate this article to my friend, "sportsman at heart,"—Dave Lewis, Forest Ranger, Moose Creek Ranger Station, Lewis & Clark County, State of Montana.

The Fifty-first Annual Meeting of The American Forestry Association will be held on the 6th and 7th of January, at Richmond, Virginia. The meeting will be a joint gathering of the Southern Forestry Congress and The American Forestry Association and will be one of the most outstanding forestry conventions of the year. The details of the program will be announced later.

The Trend of the State Park Movement

By JAMES L. GREENLEAF

President of the American Society of Landscape Architects

(Photographs by courtesy of the National Conference on State Parks)

THE preservation of things for the present and future good of the people is the common fundamental purpose of our National Forests, National Parks and State Parks. Forestry takes the two-fold form of acquiring forest tracts and cut over lands to be managed under a businesslike, scientific form use. Conservation of the forests does not mean idleness of their timber resources. It means protection against fire, insects and infection, grazing, and destruction by grasping business interests.

Conservation, both in the National Parks and in the State Park movement, means primarily the acquiring and preserving for the public of scenic regions of importance before their exploitation by activities which destroy their scenic value or make their acquisition by the public undesirable.

There are important phases of development and administration, many of them intensely practical, which call for the best service of highly trained men. Although construction problems, administrative methods, and legal questions differ greatly in the cases of National Forests, National Parks and State Parks, there is one motive of great present force in our national life that is common to all three in its influence upon their development. This is the out-door recreation idea which is gripping the public mind. The people of this country are so prone to ride a good horse to death that thoughtful men in the conservation field are becoming apprehensive lest, in the booming of the recreation idea, fundamental and primary purposes shall be overridden and forgotten. Those men and women initiating our forest and our park activities and



Hohenberger.

THE MYSTERY OF THE DUNES

Indiana is to be congratulated on the splendid progress being made in the establishment of the Dune Park, at the south end of Lake Michigan, which will secure to the State forever her right to preserve the unique beauty of the dunes.

the capable men administering them are but human; they find it difficult to get the funds on which their activities depend unless they fall in with the popular idea, and thus it comes to pass that they are strongly influenced, more or less unconsciously, by the popular movement. I ask the leaders if this is not true? And, for that matter, are not all of us interested in these af-

activities is not one whit less significant. The general current of present day thought about state parks is made evident by our activities, in fact, is shown by the character of the annual conventions of the National Conference on State Parks, of which the fifth, so highly important, interesting and successful, was held last May on the ridge of the Shenandoah Range in Virginia. How

best to awaken interest and arouse the demand in certain states, how to provide in the parks for the entertainment and handling of the public, "parking" space and motor camp grounds, water supply and sanitation, roads, drainage, methods of administration. These and the like problems well nigh absorb our attention. I would not minimize their importance but I would draw more attention to special and serious consideration of the fundamental motive of the state park movement, namely: the conservation of regions of scenic importance.

In mind is the preservation of scenery, not its development, for the latter is a dangerous term to use in connection with state parks. Municipal parks may well be "developed" but it is an exceedingly delicate matter to undertake the development of natural scenery. Any sensitive soul looks with regret upon Dame Nature entering the beauty parlor. Except in very restricted places of special character or under special circumstances, beware the hand of the improver upon a scene of natural beauty. But the preservation of scenery is another matter.

Some degree of courage is needed to discuss scenery in the abstract in America, in this land where still the point



"Flora"
IN CLIFTY FALLS STATE PARK, IN INDIANA, THE SHEER BEAUTY OF THIS VEIL OF CLEAR WATER—HALF-REVEALING, HALF-CONCEALING THE COLOR OF FLOWER AND ROCK FORMATION GLEAMING THROUGH, MARKS THE SPOT AS BEAUTY'S OWN

fairs, carried upon a current which is drifting us from our moorings of fundamental and primary purpose? Are we not tending to look upon recreation in its popular sense as the all important reason for our activities?

It is my purpose, in what follows, to consider only the influence of this recreation urge upon the trend of the state park movement, although I believe that its influence upon our National Forest and National Park ac-

tion of view of the average business man about museums and art galleries actually is that they are for the amusement of women and children. The discussion of scenery and its value is usually not attractive to the typical active busy man of affairs. His tendency is to relegate it to the list of minor matters. In this he is but the product of his time. He and his public feel that scenery is one of the cheapest things on earth, the world is

plastered with it, there never will be any lack of scenery. With him if, for instance, it will save money to place a building or build a road where it mars a view the scenery may go hang. His instinctive attitude is, let us above all be common-sense, practical men. The transcendent idea of the typical man of affairs is economy, though to get it he ruins a hillside or valley scene for all time. Such is the instinctive attitude of efficient business.

If we use our eyes and pause to think we admit that this is true. Mr. D. Everett Waid, in a recent address as President of the American Institute of Architects, described the surroundings of the typical American town as simply hideous, and they are produced by just such disregard for scenic values and propriety. Railroads gash into the hillside, factories crowd the fairest river valley. He who ventures to raise his voice in protest is brushed aside as impractical, if not a foolish crank. Public welfare has no right recognized by law to prevent devastation of scenery as such. Indeed no; the sacred right of the dollar to make another dollar must not be impeded. Whether in country district or in urban the same standards rule.

Dropping into direct personal address in order to drive the point home, I ask you what will be left of natural scenery for the time when our population has doubled unless the leaders, in these matters, hark firmly back to the simple, fundamental, primary purpose of state parks, the preservation of scenery for the sheer value of it. This is a duty we owe not only to the present but to posterity. It is not easy to stem the popular drift. Results will not come readily until the public as a whole develops an art sense but, are we drifters or are we working for the public good? In short, are we leaders or are we not? I urge on the men justly proud of technical knowledge, on the practical men of affairs—the women need no urging—on all who pride themselves upon putting things through, not to thrust the

gentle spirit of beauty to the side lines. I urge that we be not ashamed to be called idealists. Rather is there pressing need that we carry forward the ideal. Would that it were blazoned upon the banner of every park movement and that banner carried by the men of affairs. There, I earnestly assert, lies the first duty of the state park promoter, creator and superintendent.



THE SHINING WHITE SAND ALONG THE LOVELY BROKEN SHORE LINE OF STURGEON BAY, SEEN THROUGH THE VISTA OF THE TALL, GREEN TREES TESTIFIES TO THE ATTRACTION OF THE AREA INCLUDED WITHIN PENINSULAR STATE PARK, IN WISCONSIN

Probably no class of professionals feels this attitude toward the preservation of scenery more keenly than the class in which I belong, the landscape architects. In the landscape architect the feeling for beauty of scenery is, or ought to be instinctive. His leading motive is composition and design. To him roads, for example, are a means to an end, not the end itself. For him

economy in construction and the reasonable use of money are important but, economy is not the beginning and end of all things; economy which destroys important scenery is waste.

There are many examples of ill considered work to our discredit. In one of the most celebrated park valleys of this continent the roadway is carried on an ugly embankment in a long tangent down the midst of a beautiful meadow where so easily, with the exercise of a little art sense and imagination the drive might have been wound along the edge of the woodland, here retreating into the shade and there advancing to disclose a wonderful view.

It would be well for all engaged in parkway and state road location to read the leading editorial in the New York Telegram, a New York City daily, in its issue of July 1, 1925. A magnificent elm, eighteen feet in circumference, in perfect health, one of the really great trees of the state, stood grandly on the shore of Lake Seneca, but it also stood in the line of a new highway and fate had marked it. Says the editorial, "It would have been asking vastly too much, of course, to seek to alter by a few yards the course of this special Seneca Lake highway. Roads must run true to the engineer's line even though they cast aside a hundred green monuments; man must have the most direct route for his flivver even though the accumulated loveliness of the ages pay the penalty. *** What is a tree, when a highway is to be built? Why move the highway a few yards when it is so vastly easier to get rid of the tree? That's about as far as the reasoning of the modern public official goes." The great tree fell, and another long mark is scored on the reputation of those professional men who are blind to all except the one idea of technical efficiency.

To face the shield about for a moment, let us clearly recognize that never should we forget business considerations while advocating idealism and first regard for scenery. John Ihlder, Manager of the Civic Development Department of the National Chamber of Commerce, puts the matter rather well in an article in the new quar-

terly called "City Planning." He is replying to someone who had exclaimed in a burst of impatience over sordid money considerations, "the beauty that was Greece and the glory that was Rome were not founded upon financial calculations." Writes Mr. Ihlder, "the business man's view is that they were, for he knows that beauty and glory seldom grow out of bankruptcy."

Make no mistake as to this. Those planning wisely for state parks do not wander vaguely about over the face of the land and when they discover any fine scenery exclaim, go to, here we will have a state park! A wise weighing of many factors besides the quality of scenery

is called for. Legal difficulties in acquiring land and its cost, the present and probable future importance of the region for other than park purposes, possible interference with important traffic lines, a rational distribution of park area throughout this and border states; these and other practical considerations weigh, and so they should. But, when all is said and done, and the final argument made for hard-headed business sense in dealing with the state park question the fact remains, that the conservation of scenery for the present and future benefit of the public is all important.

And now let us look more directly and keenly into the present day thought on state parks. Annually for five years a representative body of able, sensible, enthusiastic men and women have

gathered from the four corners of the United States, calling themselves the National Conference on State Parks. Each Conference proves more important than the one before. To those who have not thought about it the growth of the state park idea is truly astounding. What is the reason for this and what is the impulse which moves people of affairs to gather at these Conferences? The preservation of scenery, let us hope, but a strong underlying current of thought of another nature is evident. The energetic ex-governor of Texas crystallized an idea into six words and someone was inspired to exclaim, "Here is the slogan for the Conference: 'A state park every hundred miles.'" The general feeling is voiced in the expression, "that's the talk!" And it is



MOSSY BROOK, FROM MOUNTAIN TRAIL. THE ADIRONDACK STATE PARK IN NEW YORK OFFERS MANY SUCH BEAUTY SPOTS WHERE GAY LITTLE WATERS TUMBLE INTO QUIET POOLS IN THE DEEP RECESSES OF THE WOODS

(Continued on page 702)

Federal and State Responsibilities in Forestry

BY HENRY S. GRAVES

Dean, Yale Forest School

HOW far the central Government should go in forestry and similar affairs is today being called into question. There is a very vigorous movement in the country against further centralization in the federal government of matters that many believe should be left to the states. This is expressed in the opposition to efforts to bring about uniform practice and standards in such matters as divorce, child labor and education, and against federal direction or regulation of affairs of an industrial, economic, or social character. The movement opposes any extension of the co-operative principle of appropriations by which the Government provides funds for internal improvements or other purposes upon condition of an equal amount being expended by the beneficiary states. This sentiment is expressed in resolutions passed by many organizations. The question was discussed at the last Conference of Governors. Many publicists and political leaders are taking the problem of federal centralization as a text and the matter is assuming the proportions of a "states' rights" movement.

The President has declared himself in no uncertain terms in regard to the need of the states assuming in larger measure their responsibilities in public matters and warns the country against the dangers of too great federal centralization. He is concerned by the tendency to extend the co-operative method of appropriations. In his memorial address in May he said: "One insidious practice which sugar-coats the dose of federal intrusion is the division of expense for public improvements and services between the state and national treasuries. . . . The average American, believing in our dual-sovereignty system, must feel that the policy of national doles to the states is bad and may become disastrous. We may go on for a time with the easy assump-

tion that 'if the state will not, the nation must.' By that way lies trouble. When the national Treasury contributes half, there is a temptation to extravagance by the state. . . . Whenever by that plan we take something from one group of states and give it to another group there is grave danger that we do an injustice on one side and a political injury on the other. We impose unfairly on the strength of the strong and we encourage the weak to indulge their weakness."

It is without doubt wise to call attention to the dangers involved in transferring to the central Government responsibilities that should be assumed by the states. Inevitably many persons become impatient when their state

governments fail to act in matters of vital importance and they turn to the federal Government as a means of securing prompt and efficient results. A tendency toward centralization is perhaps apt to become indiscriminating and to go so far as to impair the sense of local civic responsibility on the part of the people.

On the other hand there is equal or greater danger of failure by the Government to recognize national responsibilities

and of taking no action in matters that are national in character and scope and which by their nature can never be handled by the states and communities alone. Perhaps the most glaring example of the failure to assume national responsibilities is in the handling of our natural resources. Today we are facing a multitude of economic difficulties directly attributable to a policy of *laissez faire* long pursued by our Government in the handling of the public lands. The lack of intelligent foresight and a weak, lax, and sometimes corrupt administration of the public resources are responsible for an economic situation that is resulting in great wastage and rapid dissipation of some of our most

THE growing opposition to the cooperative principle of appropriations by the Federal Government, and the danger of this opposition failing to discriminate between Federal and State obligations in forest protection and restoration, is a threat to the progress of forestry in the United States. In this article Colonel Graves ably discusses this timely question, and with constructive foresight points out the elements vital to successful cooperation under the Clarke-McNary act. Experience the world over, he declares, has taught that the perpetuation of forests cannot be left wholly to private initiative. In every country the practice of forestry has begun with governmental activity. Forestry is not exclusively a state problem. It extends beyond state borders, and carries responsibilities for the nation, the state, the public and the forest owner. Unless each will recognize and meet its own obligations, a national forest policy, based upon the spirit of cooperation, eventually must fail.

valuable natural resources. I need only to refer to the problems of soft coal, of timber, and of the western stock ranges as conspicuous illustrations. Fortunately in recent years the policy of *laissez faire* in forest matters was abandoned and the remaining forests on the public domain were set aside as National Forests and Parks. We are now struggling to recover the ground that was lost during a century of failure to assume national responsibilities in the handling of our forest resources; and we are trying to work out a national forest policy through various devices of co-operation with the states and private owners, public education, and the like.

Since the war there has been wide discussion of the need of a national forest policy. The very proposal carries with it the idea that there is a forest problem of such importance as to touch the interests of the whole nation and to command the participation of the federal Government in its solution. Experience in this country and the world over has taught us that the perpetuation of forests cannot be left wholly to private initiation. A glance at history shows that in every country the practice of forestry has begun with governmental activities. In all cases also the State has been forced to act in order to prevent serious injury to public interests. History has been repeated in this country. Almost nothing was accomplished until the federal Government established a system of National Forests and the states followed with public forests and with various other activities.

It is well to call attention to the public character of the practical problem of securing forest perpetuation. Experience has demonstrated that the protection of forests from fire requires common effort and that this can be accomplished only under the direction of an authorized public agency. Moreover, there are other difficulties in the practice of forestry by private owners which require the co-operation of the public, such as the general property tax as now applied in this country, the lack of information of the best practical methods of forestry and the lack of a dependable supply of seed and forest plants at reasonable cost. The very length of time required to grow trees creates problems that cannot be worked out with the simplicity of agricultural production. Fortunately, we have been able to secure in a measure the recognition that the public must take part in bringing about a better handling of our forests and the various interested agencies are urging an enlarged program of forestry by the federal Government as well as by the states.

The establishment of the National Forests was accomplished in face of the most intense opposition. During the early years there were repeated efforts to break down the whole system. One of the favorite proposals was to divide the public forests among the states, supported by the usual states' rights arguments. The purpose was not to perpetuate these forests as state properties but to continue under the states the old system of private dis-

tribution with its attendant evils of speculation and inevitable destruction of the resource.

Curiously there is at the moment a recrudescence of the attacks on the national properties, and this time through the activities of the live-stock interests of the west, and again we are hearing the old states' rights arguments. We now have the picture of a great industry endeavoring to gain control of the public ranges, and to obtain what amounts to prescriptive rights in the use of lands which cannot be obtained in fee. If the plan, which is advocated with the most audacious frankness, should succeed, the proper handling of the forests and the safeguarding of the dependent water resources would in my opinion be an impossibility.

It is a cardinal principle in a national forest policy that the present National Forests should be maintained in perpetuity and that the system should be largely extended. The greatest single influence in forestry has been the National Forests. They constitute the greatest element of stability and promise in the timber region of the far west. Not only are they rendering a great service in themselves, but they are primarily responsible for progress in state forestry and in co-operative fire protection on private lands in the regions where they are located.

A second feature of a national forest policy that has had the support of the various interested agencies is that of co-operation between the Government and the states in fire protection and certain other features of forestry. We have already gone pretty far in the co-operative principle in forestry. The beginning was made in the original Weeks Law of 1911, which appropriated moneys to acquire federal forest lands in the White Mountains and in the Southern Appalachians. That law carried also an appropriation of \$200,000 to enable the Secretary of Agriculture to co-operate with any state or group of states, when requested to do so, in the protection of forests on the watersheds of navigable rivers. The law required that before entering into a co-operative agreement in a given case the state shall have established a system of fire protection; and there was also the condition that no federal allotment should exceed the state appropriation for fire protection.

The results of the co-operative work were so successful that the federal appropriations were later increased to \$450,000; and recently the Clarke-McNary Act was passed which is based on the same principle of joint action by the Government and the states in certain forestry activities. The act authorized a total expenditure of over \$2,500,000 on the co-operative principle and the last congress appropriated \$660,000. The forestry interests are now asked to urge upon the President and the next Congress a very substantial increase in federal allotments toward the Clarke-McNary undertaking. In making this request we must realize that it is in furtherance of the method of co-operative appropriations that today is being opposed by many citizens. It is therefore essential to be certain that we are on solid

ground and that the principle is thoroughly sound as applied to forestry.

The decisive factor in this discussion is the fact that we are dealing with a problem that is so far-reaching that it extends beyond state borders and touches the interests of every citizen of the country. There are very definite responsibilities in forestry that should be assumed by the nation and which we cannot expect to be taken over wholly by the states. The nation cannot escape the responsibility of administering in the interest of the whole people the National Forests and Parks. Very cogent reasons can be given why the nation should largely extend the system of National Forests, which would in no way lessen the responsibility of the states to establish state forests and parks.

But the nation's functions go still further. The urgency of the problem of forestry requires public participation in the betterment of conditions on private lands. The most ambitious program of public forestry contemplates the acquirement of only a limited portion of the forests of the country. In the long run we must still look to the private forests for the larger part of the production of forest products. The solution of this question cannot and should not be left wholly to the states, nor should it be entirely assumed by the Government. It happens that in this instance the responsibilities of the Government and the states are coincident. It is perfectly obvious that the simplest and most effective plan is for the two to join hands and work together. The purpose of the federal appropriations that are made contingent upon an equal amount from the beneficiary states is to fulfill a clear-cut national function. It is not in the nature of a dole to help the states in what is wholly a state function. So far as forestry is concerned the principle is sound. To controvert this statement one must argue that the problem of forestry has only a local and not a national character. The co-operative principle is sound whenever it represents joint action in meeting definite Government and state responsibilities.

The Clarke-McNary Act is sometimes referred to as a national forest policy. This is of course far from the case. It constitutes an important step toward such a policy and covers certain important features of a national policy. Thus it does not provide a program for the essential expansion of the public forests. It is, however, an effort to remove the more important obstacles to private forestry. It aims to make forest lands reasonably secure from destruction and serious injury by fire. The act strikes at the tax problem by providing for a study that should furnish a real basis for a sound system of forest taxation. It makes provision for co-operation in securing material for planting at reasonable costs. It recognizes the needs of the small forest owner in furnishing means to instruct him in the right way to handle his forest property.

It is clear that our private timberlands will not be handled with a view to continued production until the objectives of the Clarke-McNary Act are brought into

operation. Few men will invest money in forestry until there is an element of security from fire and from the uncertainties and burdens of an unsound system of taxation. The next step is the practice of forestry in the woods. It is often said that fire protection constitutes 85 per cent of forestry. In spots this may be true, largely because the methods of cutting already provide in a measure for natural reforestation. Applied generally in the country the statement is not true. Whether cutting of the forest is to be followed by adequate reproduction depends upon the definite measures taken to provide for it. The character of the forest may be such that only a slight change in the methods of cutting is required. But it is not true that a forest can be stripped off over extensive areas, as is now done in many sections, with no provision for seeding the ground, with the expectation that a forest of good species and growth will follow. Except in very critical areas from a climatic standpoint some vegetation will in the long run replace the old forest. In most instances, however, such a stand is only partially stocked, often of poor species and degraded in quality. Over thousands of acres of second growth we find conditions so poor that we must wait an entire tree generation before a reasonably productive forest can be obtained, and the existing stands hold out little promise for returns sufficient to cover the cost of carrying them to maturity.

Thus we must not delude ourselves with the belief that fire protection, tax reform, research, public education, and the like will in themselves bring about a general change in the methods of handling private forests. For the actual results in the forest we must look to the owner and timber operator. The test of a forest policy is not the existence of laws on the statute books or vigorous activities of public forest officers; it is whether our forests are being continued in productive and serviceable condition. The public is, I believe, prepared to co-operate in a liberal spirit with private owners to bring this about, recognizing the difficulties that confront them. But there is the insistent expectation that these owners will adopt the practical measures essential to leave their forests after cutting in a condition for good replacement by new timber growth. Moreover there is an expectation that these efforts will be taken coincidentally with the undertaking by the public to make them practical and feasible, through fire protection, tax reform, and other measures. The public will not be satisfied with anything less.

Distinct credit is due to those who are endeavoring to adopt effective methods of forest replacement. It is, however, an impressive fact that in our great centers of lumber production there is a feverish haste to cut the choicest of last remaining bodies of timber, and that over a large part of the area there is no effort beyond fire protection to restock the lands after cutting. In some places there is some accidental replacement. Over very extensive areas, however, the results are so desperately bad that the land must fall into the Government's

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Battell Forest

An Epoch-Making Project Among American Colleges

By THEODORE S. WOOLSEY, JR.

AT THE time Battell Chapel was being constructed in New Haven more than half a century ago Joseph Battell, a member of the Battell family of Connecticut, was acquiring low priced and inaccessible spruce and hardwood land along both slopes of the Green Mountains, between East Middlebury, Vermont, and the villages of Hancock and Rochester. Battell Chapel, given to Yale, or Battell Forest, bequeathed to Middlebury College in 1916! Which of these gifts will be the most lasting family memorial?

Battell Chapel, so well known to all Yale graduates, is a dignified building that has served Yale since 1877. How long will it be used? Most certainly the time is not far distant when this memorial chapel must be replaced by a larger building. Whether Battell Forest will be a great memorial a century from now, depends on the President and Trustees of Middlebury. Will it be devastated like most private forests in New England, New York, Pennsylvania, the Lake States and in

many parts of the South; or will it be wisely cut for lumber with a park set aside for recreation?

If I judge correctly the wishes of the late Joseph Battell and the policy of President Moody, and the College Trustees, this great forest of more than thirty-one thousand acres will forever remain a monument of timber production for the northeast and a playground for thousands of summer visitors.

Of all the land within this forest area more than nine-tenths is potential forest soil best adapted for timber-growing. The more intensive industry of agriculture can never rob Middlebury College of its timber.

According to "*Middlebury*," a circular commemorating the College—1800-1923: "In this mountain wonderland that contains some of the finest bits of scenery in the state, the College might be said to have a mountain campus. Here Middlebury men and women have a rare recreation ground, a picture gallery of the hills — unique among American colleges."



THE PICTURE GALLERY OF THE HILLS

High up on the ridges of the Green Mountains, a few miles east of the village, begins Middlebury's "Mountain Campus"—a tract of 30,000 acres of primeval forest mountain land, bequeathed to the college in 1916 by Joseph Battell, to be maintained in its natural beauty as a forest preserve for the enjoyment of mankind and for use as a laboratory for the study and practice of scientific forestry.

These slopes, rising to the crest of the Green Mountains, traversed for twenty-seven miles by the well-known "Long Trail" of the Green Mountain Club, are now timbered with two-fifths spruce and fir and other soft woods, and three-fifths mixed hardwoods, chiefly hard maple and yellow birch, with a scattering of beech, soft maple, white birch, ash and basswood. The timber is largely over-mature and if in private hands would undoubtedly be completely logged at once and put on the lumber market as rapidly as possible. Under the Joseph Battell will this devastation can never take place; moreover, one-sixth of the stand lies within *Battell Park*, which will be operated for recreational purposes.

Battell Park, as distinguished from the forest proper, is a fascinating problem and on January 31, 1925, the Trustees of Middlebury College approved of a definite policy to govern its management. The boundary is to be permanently marked, and until



IN THE FOREST

With a timber content two-fifths spruce and fir and other soft woods, and three-fifths mixed hardwoods—much of it mature—the decision to cut Battell Forest on a periodic sustained yield is epoch-making among American colleges. It is the first formal record of a group of business men taking a stand for cutting a commercial forest according to the accepted rules of forest regulation.



ALONG THE TRAIL

The famous "Long Trail" of the Green Mountain Club traverses Battell Forest for twenty-seven miles—this forest that is to forever remain a timber producing area and a playground for thousands of lovers of the out-of-doors,—this forest demonstrating that a northern forest can be cut over conservatively and yet yield a moderate stumpage profit.

otherwise directed there is to be no cutting in virgin timber along the banks of Middlebury River and within the Park except for road improvements or to remove windfalls or trees subject to windthrow. The Trustees further ordered that no land, whether virgin or second growth, if visible from the Breadloaf Inn or Silent Cliff, both frequented by tourists, shall be clear cut. Cutting outside the virgin forest will aim at the best development and preservation of the land for park purposes. What cutting there is will be conservative—selection cuttings and thinnings—except where a sugar bush is being developed. The park will therefore preserve, as a lasting memorial to Joseph Battell, interesting examples of Vermont's virgin growth which in years to come will probably be unique throughout New England and of great historical and scenic interest.

When Joseph Battell drew up his will he wrote:

"Being impressed with the evils attending the extensive destruction of the original forests of our country and being mindful of the benefits that will be enjoyed by the citizens of Vermont and the visitors within her borders from the preservation of a considerable tract of mountain forest in its virgin and primeval state" . . .

Within this park there are points of great natural interest, particularly Lake Pleiad near the crest of the range—almost two thousand feet above the sea. Trout streams and points of especial scenic interest, particularly where the virgin stand is still intact, will be reserved from all cutting. Only dead and down trees will be removed and in some spots even dead timber will be left. Trails and roads will be developed and it is hoped that years hence this will be one of the great scenic attractions of Vermont, a state already rich in beautiful lake and mountain scenery.

This obligation to keep the park a *forest in being* offers the opportunity of demonstrating that a northern forest can be cut over conservatively and yet yield a moderate stumpage profit. Correct silviculture rather than the economics of profitable logging will be the controlling factor. Once given the necessity of cutting conservatively the forest manager may be able to work out a market for the products of thinnings, and for the short lengths from over-mature hardwoods. Perhaps some friend of forestry will contribute towards the establishment of these experimental cuttings which will be of service to the profession.

Battell Forest includes five-sixths of the timber growth on the 31,000 acres and is a commercial stand which is to be devoted to permanent forest production. The management of this forest will be based upon the accepted principles of forest management. To tie up this over-mature timber would be about as disastrous as rank overcutting, for it would encourage loss through windfall and disease.

Middlebury College recognizes that the commercial forests of the United States are fast vanishing and that fully three-quarters of the land of our country which should be growing forests is not being replaced with valuable timber, because of the handicaps imposed by the long time required to grow timber, wasteful private ownership and excessive taxation. Middlebury knows

that in Europe the best managed forests are public forests in state or communal ownership. "Institution forests," like Middlebury, semi-public in character and large private estates which are able to employ a forester, are also well handled. The most abused forests of Europe, even in countries where conservative forest management has been accepted as a national policy for more than a century, are the small areas belonging to peasants and others, where the evils of changing private ownership are most felt.

Joseph Battell's will wisely provides for stable ownership and Middlebury College recognizes that Battell Forest is a trust and not a gift to be squandered or rapidly turned into cash. Its stewardship will be judged by the results of a century of cutting and not by the financial returns of a few years. It was for this reason that over a year ago the Board of Trustees unanimously approved a

set of rules for the forest, among which are the following:

No timber shall be cut unless marked or otherwise clearly designated by the Forest Manager or his representative.

Purchasers of stumpage shall be obliged under their contracts to take all reasonable precautions for the prevention of fires.

Forest land of great recreational and soil protection value shall not be denuded.

No timber sales for periods of more than three years shall be made without the specific approval of the Advisory Board.

Net forest income shall alone be used for College operating expenses. The net proceeds from sales of excess timber capital shall be carried to principal account of the Battell Forest.

In making sales of timber preference shall be given to local industries when possible.

The Advisory Board referred to is composed of R. C. Bryant, Professor, Yale School of Forestry; R. T. Fisher, Director, Harvard Forest, Petersham, Massachusetts; J. L. Goodwin, Consulting Forester, Hartford, Connecticut; State Forester of Vermont (now R. M. Ross); Theodore S. Woolsey, Jr., Consulting Forester, New Haven, Connecticut.

Thus the College Manager and Expert Forester, J. J. Fritz, has the advice of a group of foresters engaged



LAKE PLEIAD

Near the crest of the range—almost two thousand feet above the sea—this gem of beauty nestles in the heart of New England's virgin forest.

in widely different lines of work. The formal vote of the trustees to cut Battell Forest on a periodic sustained yield is perhaps epoch-making among American colleges. It is the first formal record of a group of business men taking a stand for cutting a commercial forest according to the accepted rules of forest regulation. Already stock taking has been completed and the college knows what it has in its forest warehouse.

Using the best available data, already a definite rotation has been established within which it is hoped to produce the new crop. The excess timber capital will be gradually removed during thirty years. With further research no doubt the rotation and other technical details may be corrected, but the important point is that a sound general policy has been established based upon the best available information. A modern system of timber sales has been inaugurated and every sales contract aims to improve the forest as well as to yield a revenue. Close utilization of merchantable material precludes the waste of timber so urgently required by New England industries. Even dead timber, if it is fit for any commercial use, is logged and sold. Low stumps are cut; the limbs of softwood tops are lopped so that the branches will lie flat on the ground and rot quickly and will not continue to be a fire menace; special precautions are taken to prevent fires from starting. Logging camps and other structures are kept in a clean, sanitary condition. And most important of all, these sales will build up permanent forest settlements and will prevent a vigorous mountain and farm population from deserting their lands and drifting to industrial metropolitan centers. A sale just negotiated for more than three-quarters of a million dollars worth of timber will extend for a period of thirty years and will mean the upbuilding of several villages in the Rochester Valley.

From every standpoint this policy is certainly better for the community than the rapid gutting of a valuable timber crop and the sudden or gradual abandonment of whole towns such as occurred in Pennsylvania after the peak of timber production dropped. Forestdale, at one end of the forest, is already a permanent woodworking industry which uses short lengths and low quality logs that would be scorned by lumber companies in most parts of the country. Forestdale's woodworking plant is a credit to Vermont and is well worth the visit of every tourist who is in that locality.

There are problems which must be worked out in the forest. It is hoped most of the new crop will be secured by natural regeneration. If this fails, extensive planting operations must be undertaken. Already the trustees have ordered that each year one-thirtieth of the unproductive area be replanted. There is need for a study of the permanent transportation which will be required to facilitate systematic improvement, cuttings and thinnings. There must be research into the thinnings and improvement cuttings best designed to produce the most salable and most needed product. From the financial standpoint the worst dilemma of all is the ever-in-

creasing taxation which at present bears most heavily on virgin areas exclusively devoted to recreation.

Thus Middlebury College aims at the wisest use of its forest and public and private benefits that will grow with the advancing years.

Dagger Wood

By CHARLES A. HARTLEY

THE dagger wood bush, commonly known as dogwood, makes a splendid ornamental tree for yards, when it can be induced to grow away from wooded sections. It is difficult to start in yards, but when it does grow, it spreads much more symmetrically than in the shaded forests, its habitat, where because of the



WHAT COULD ADD A MORE PICTURESQUE TOUCH TO HOME GROUNDS THAN A DOGWOOD TREE, WITH ITS HEAVY, CREAMY PROFUSION OF BLOOM? THIS ONE IS AT THE HOME OF JUDGE CHARLES E. PEOPLES, OF POMEROY, OHIO

shade it grows tall and spindling. Its bower of white blossoms in the early spring makes it most attractive.

Professor T. C. Frye, of the botany department of the University of Washington says that this bush derives its name from a long connection with butchers and *not* from canine associations.

"Years ago," he says, "when meat was roasted over an open fire, sticks of hard wood to withstand the heat were put in the meat to keep it from falling apart when done. The sticks were of daggerwood. This was later shortened to dogwood."

Rail splitters of Lincoln's day sought this wood to make wooden wedges to drive into large logs to open up the logs after a small crevice had been made by iron wedges. The reason for this was that the wood was tough and withstood the constant pounding with wooden mauls without splitting, and the longer they were used the slicker and tougher they seemed to become.

Frost Flowers

The Result of Exudation of Ice from the Stems of Plants

By W. W. COBLENTZ

A FAMILIAR sight on a cold frosty morning is the formation of columns of ice,—“ground ice” on a bare and rather wet clayey soil. The movement of the water through the soil is produced by capillary action. If the moisture content of the soil decreases, and wind conditions are such that evaporation occurs as rapidly as the moisture is brought to the surface, no ice is formed.

An interesting experiment is to place shreds of unglazed pottery (pieces of an ordinary red clay flower



THE ICE PLANT, DITTANY, IN BLOSSOM
(*Cunila mariana*)



THE BIRTH OF A FROST FLOWER

The dried plant stems were inserted in a glass test tube containing water and placed outdoors on a cold, frosty night. One stem was sealed over at the end with cement and no frost flowers formed. On the open stems, however, exquisite fringes came into being, proving the theory that capillary action is a large factor in their formation.

pot, say one-half inch wide and one inch long) upon wet soil which is subject to this kind of ice formation. I have observed a column of solid ice more than an inch in height on a fragment of flower pot imbedded in soil upon which was ground ice only one-fourth to one-half of an inch in thickness. It was an interesting sight to see an expanse of ground ice, perhaps a yard in diameter in the midst of which was this column of ice on the pot fragment protruding high above its surroundings.

Ice fringes, formed on the dried stems of a plant (Dittany, *Cunila mariana*) having an abundance of sap tubes are shown in the photograph on this page. In this experiment the stems, which were perhaps 4 inches in length, some freed from bark, were mounted in a heavy pasteboard holder by means of a cement that prevented moisture from creeping up on the outside of the stem. These stems were then inserted in a glass test tube of water, and placed out of doors on a cold frosty night.

One stem, which had its lower end covered with the impervious cement to prevent moisture being drawn up through the sap tubes, formed no ice fringes. On the other hand, the stems which had their lower ends immersed freely in the water, thus permitting the liquid to be drawn up in the sap tubes by capillary attraction, formed beautiful fringes, which unfortunately were partly destroyed by melting the next day while making the photograph.

Ice fringes are found on many kinds of annual plants with perennial roots, and for years the question of the manner of formation of these fringes has been an interesting subject for study. Just a century ago Stephen Elliott, in his “Sketch of Botany in South Carolina and Georgia” described a remarkable protrusion of fringes of ice from the stems of flea bane (*Conyza bifrons*). In 1833 Sir John Herschel described ice fringes which

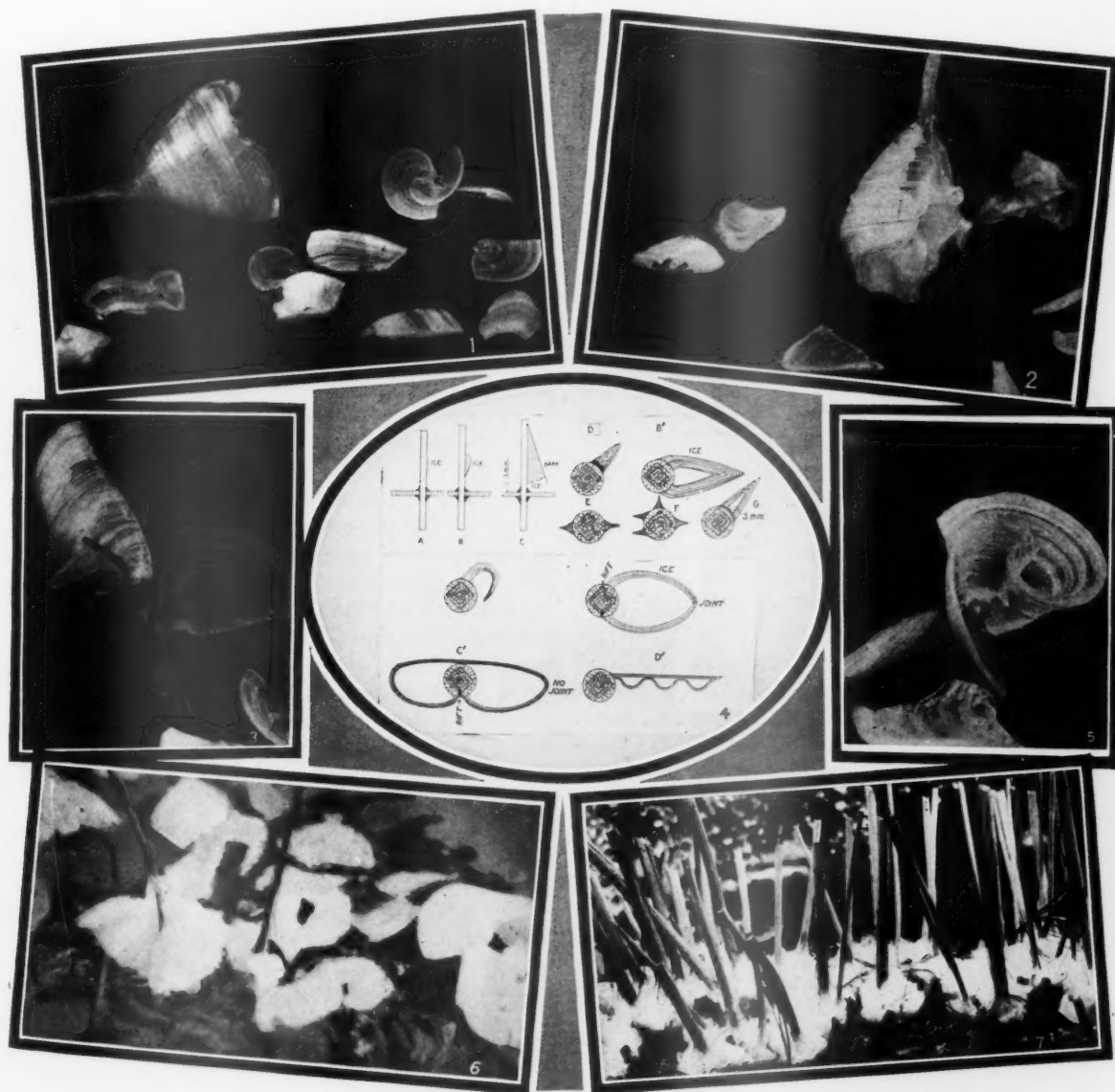
formed around thistle stalks and the stumps of heliotropes, many of which were still green. The ice fringes illustrated, on the stumps of heliotrope, were grown in the botanical garden of the University of Besancon, France, and I am indebted to Prof. Magnin, director of the Botanical Institute for them.

Among the older writers John Le Conte (in 1850) published the fullest account with an attempted explanation of this phenomenon as observed on two species of flea bane (*Pluchea bifrons* and *Pluchea camphorata*) which

he found growing in wet soils, around ponds and along roadside ditches in the lowlands of South Carolina and Georgia.

My own studies of this phenomenon have been made upon the common "rock mint," or "dittany" (*Cunila mariana*) which is to be found growing in the woodlands about Washington.

Some of the figures illustrate these beautiful fringes, which range from one to three inches in length. While they are not the largest obtainable they were selected to



"FROST FLOWERS" IN THE FORM OF SHELL-LIKE STRUCTURES OF ICE OF PEARLY WHITENESS, CURLED AND FLUTED, DAINTY AND BEAUTIFUL, QUITE LIKE THE PETALS OF LOVELY GARDEN FLOWERS

Figures 1, 2, 3, and 5 show the varied forms the frost flowers take. It is difficult to get good photographs of the complete formations for they melt so quickly. Figure 4 of the group is a diagrammatic illustration following the exact process of the forming of the flowers, described in the text. Figure 6 is an artistic grouping of ice fringes on dittany against a background of white oak leaves, and the frost flowers appear here not unlike lovely marsh mallows. Figure 7 was made in the Botanical Garden of the University of Besancon in France, and shows ice fringes on the stems of verbena (*V. virginica*).

portray successive stages in the development of the ice ribbon; also the complex forms assumed during their growth.

These ice fringes may be found on the dittany plant in cold frosty mornings during the months of November to January, when there is plenty of hoar frost but while the ground remains unfrozen. The plant is very fragile and is easily broken and blown away by the wind.

The production of ice fringes on plants having living roots is probably more complex than that just described for ice formations on the ground, produced by the movement of moisture by capillary attraction. The stems are annual while the roots are *perennial* and as long as the stem remains attached to the roots the water continues to pass up through the living stem as usual. In other words, the cell walls of the plant acting like a semi-permeable membrane, water from the soil enters the cells of the hair-like roots of the plant and introduces an osmotic pressure. These cells in turn give up water to adjoining cells containing a higher concentration. Thus water passes from cell to cell until it reaches the large sap tubes through which it is forced by osmotic pressure and by capillary attraction. Reaching a point a short distance above ground it comes to the surface of the stem where, if evaporation is not too rapid, the ice fringes are formed.

This appears to be the mechanism that produces the movement of the water through the living stem, although as shown on page 682, the vitality of the stem is not a necessary factor. The material exuded is tasteless and seems to be quite free from organic matter. However, recent investigations in which a large quantity of ice was evaporated showed organic matter. But even this does not prove that the ice fringe is due to the presence of the organic matter.

The production of ice fringes evidently is a physical phenomenon which depends upon the presence of a great abundance of sap tubes which can supply moisture at a greater rate than it is carried away by evaporation

and by air currents. Even the dittany plant produces the finest and largest ice fringes only on frosty, wind-still nights.

All observers seem to be in agreement that these ice fringes are not formed by accretion of ice particles at the tip of the fringe; but that the moisture comes from within. A most interesting question which in my opinion has not yet been satisfactorily answered is the mechanics of the growth of the fringe whereby it is pushed out from the stem and at the same time remains attached to it. Some years ago with several colleagues, I witnessed the formation of the fringe from its very beginning, and it was most interesting.

Several dried stems were placed in water as illustrated in the photograph on page 682, and exposed outside the laboratory window on a bleak, cold February morning. In about 20 minutes the ice fringe began to form. It consisted of a row of fine hairs extending up and down, over a length of about 4 mm. of the stem and projecting out horizontally 0.2 to 0.3 mm. as shown in Fig. 4 A of the group picture on page 683.

One stem showed a fine hairy fringe which was visible only when viewed against a gas light. Within half an hour this hairy fringe appeared to be solid with some of the "hairs" extending horizontally outward through the solid "tooth" of ice (Fig. 4, B). After a time these fine hair-like filaments of ice formed into a tooth-shaped mass, as shown in Fig. 4, D, and E. During the field observations numerous other formations were observed, such as the loop-shaped ones depicted in the lower part of Fig. 4. Some of these fringes seemed to be joined into homogeneous loops while others seemed to be jointed.

Ice fringes are *not* formed after the ground has become frozen solid, and they are *not* formed on plants exposed to the wind. They are observed at their best on a cold morning after a wind-still night with hoar frost on the ground. One may then find all sorts of shapes from the plain ribbons to the beautiful conch-like shapes illustrated, rivalling in whiteness and beauty of form the most exquisite of sea-shells.

AMONG THE PINES

By Dorothy Cooper Johnson

Where trees upon a hillside stand
With arms uplifted to the sun,
Along a winding path I've found
A place where golden hours are spun.

Invisible the Hand that holds
The shining threads and deftly shifts
The wheel of magic from which floats
A dust of gold that earthward drifts.

And filled with radiance, the air
Is like a lucid amber stream
That floods the wooded place until
Like burnished shafts the tree trunks
gleam.

Where trees upon a hillside stand
With arms uplifted to the sun,
Along a winding path I've found
A place where golden hours are spun.

Larger Appropriations Urged for Federal Forestry

MORE forests and more forest fire protection throughout the United States were stressed as measures of national economy by representatives of twenty or more organizations which appeared before General Herbert M. Lord, Director of the Budget, on September 28. The hearing was arranged and directed by The American Forestry Association with the purpose of laying before the Director of the Budget information which, in the judgment of the organizations represented, demands a policy of greater liberality on the part of the Federal Government in providing money for the operation of the Clarke-McNary Act. The keynote of the message carried by the representatives was aptly expressed by former Governor Frank O. Lowden, of Illinois, when he told the Director that he could not conceive as an extravagance any activity on the part of the Government which seeks to perpetuate and build up our natural wealth.

Two activities of primary importance were discussed with General Lord. One was the need for a larger appropriation under the Clarke-McNary Act to enable the Federal Government to meet its obligations to the states and the nation in forest fire prevention. It was pointed out that although the Act authorizes an annual appropriation not to exceed two and a half million dollars, Congress at its last session appropriated only \$660,000. This, the representatives declared, is inadequate to permit the Federal Government to meet the forest fire activities of the states and private timberland owners under the cooperative plan of the forestry act. During the coming year it was urged that the appropriation of not less than a million and a half dollars be made available for fire protection work by the Government, and that the full amount authorized by the Act should be appropriated as rapidly as possible.

For larger activities on the part of the Government in buying timberlands in the East for the protection of streamflow and for the production of timber, the representatives urged approval of \$3,000,000 for the coming year. The present appropriation of \$1,000,000 for the current year was declared inadequate in view of the increasing dependence of the whole United States upon distant forests on the Pacific Coast which must sooner or later become exhausted. It was pointed out that the present appropriation is hardly sufficient to meet special emergencies which may arise in the acquirement of land urgently needed to protect the headwaters of eastern streams. A special example was cited in the White Mountains of New England where in order to save the region from devastation, it is necessary for the Federal Government to compete with private interests which are attempting to acquire the land for exploitation.

Mr. George D. Pratt, President of The American Forestry Association, and Colonel Henry S. Graves made the principal presentation, pointing out the weakness of the Clarke-McNary Act without adequate appropriations.

When Ex-Gov. Frank O. Lowden was called upon,

General Lord said "The Budget Bureau is highly honored, Mr. Lowden, to have you, whom we know as a pioneer of the budget idea, appear before us."

"I assure you, General Lord," responded Mr. Lowden, "that as I have listened to the statements in this meeting, I have felt very much at home. But," he continued, "it is hard for me to conceive of anything as an extravagance which has as its object the perpetuation of our natural resources."

Mr. Francis Cuttle, a Vice-President of The American Forestry Association and representing a large number of conservation and civic agencies in California, spoke for the water-using interests of the west and emphasized their dependence upon watershed cover and the need of Federal aid in keeping this cover from burning up.

Others who spoke for the forestry items were Colonel Joseph Hyde Pratt, North Carolina Forestry Association; L. W. Wallace, American Engineering Council; Arthur Ringland, National Conference on Outdoor Recreation; Judge H. C. Fabyan, Waterville Valley Association, New Hampshire; Philip W. Ayres, Society for the Protection of New Hampshire Forests, and A. S. Houghton, Camp Fire Club of America. Beside the speakers, those in attendance were H. L. Tilghman, President Southern Forestry Congress; E. P. Allen, National Lumber Manufacturers' Association; Wm. M. Ritter, National Lumber Manufacturers' Association; Carlos Avery, Vice-President American Game Protective Association; George W. Sisson, President Empire State Forest Products Association; E. B. Reid, American Farm Bureau Federation; H. R. Condon, Pennsylvania Railroad Company; R. G. Merritt, American Tree Association; Warren Bullock, of the National Forestry Program Committee; J. V. Chatterton, of the Seaboard Air Line Railroad, and Shirley W. Allen, Forester, The American Forestry Association.

Mrs. John D. Sherman, President of the General Federation of Women's Clubs, was unable to attend the hearing but signed the statement which was presented to General Lord.

R. S. Kellogg, of the National Forest Program Committee, followed The American Forestry Association group and spoke in behalf of a large number of forestry items including white pine blister rust control and special research projects in The Forest Products Laboratory. He was supported by Elbert H. Baker, of the American Newspaper Publishers' Association, and Dr. Wilson Compton, of the National Lumber Manufacturers' Association.

Following the hearing before General Lord, two officers of The American Forestry Association, one from the East and one from the West, called upon President Coolidge and discussed with him the urgency of the Federal Government adopting a larger program of forest reconstruction along the lines of those presented to the Director of the Budget.

Federal and State Responsibilities in Forestry

(Continued from page 677)

classification of "non-restocking" or "waste." The current methods—such for example as are used in the Sierras of California and parts of the south—will not suffice to meet the objectives of a national forest policy. And the results will not satisfy the public that is at this moment looking to the co-operative methods as exemplified in the Clarke-McNary Act. The nation will not continue to expend \$30,000 a year in California to keep fire out of land that is merely left in condition to produce bear clover and manzanita brush, nor \$50,000 a year in Minnesota if no efforts beyond co-operation in fire protection is to be made by the owners to make provision for a restocking of the lands with good trees.

The public must prepare the way under such methods as are provided by the Clarke-McNary Act and to this end must give the strongest support to added federal appropriations under its broad authorization. That it constitutes the solution of the private forest problem from the public standpoint remains to be seen. That depends upon the response of the owners and operators, especially in those regions where our chief output of forest products is now obtained. Increasingly the eyes of the people will be upon the results of the handling of private forests, and if these results are not successful, a much more vigorous public policy with reference to private lands will have to follow.

Tracking the Sawmill Westward

(Continued from page 648)

apart, and in 1922 the enclosing circle had a diameter of 482 miles. The diameter is increasing at the rate of about 40 miles a year. By 1930 it should be about 800 miles long, and by 1950 possibly reach its maximum of 1,100 miles. The movements of these centers are graphically shown by the map on page 647.

Population and Consumption appear to have approached the western end of their journey, although both will eventually be found farther west than in 1920, close together, and probably a few miles east of the Mississippi, in Illinois. Timber, with its center first in Missouri, has been steadily marching west, and it may not stop short of the west boundary of Wyoming, but will eventually return to the region of St. Louis. Production, following far the longest and most crooked route, is hurrying to overtake Timber, and will follow it easterly.

There is meaning in these relative positions, especially as regards Production and Consumption, and the distance between them. That distance, as previously observed, is not the "average haul," which is always greater, by half or more. Nevertheless it is fair to assume that the two distances are nearly proportional.

When Production reaches its extreme westward position, it will be over 1,100 miles from Consumption, or nearly three times as far as in 1920. If the proportion holds, the average haul, which in 1920 was 670 miles; will become 2,000 miles, and the average rail freight cost, which in 1920 was about \$10 a thousand feet will amount to about \$20 when the lumber cut on the Pacific Coast is at its maximum. The deduction may then be made that average lumber prices may go up as much as \$10 a thousand in the next quarter century solely on account of increasing hauls. That will mean a doubling of the 1920 freight bill, or from \$500,000,000 to \$600,000,000 spent annually for rail freights on lumber, less such reduction as may

occur on account of decreases in the lumber cut, and the unknown factors of altered rates and the quantities transported by sea.

When the virgin timber of the West coast is exhausted, the lumber industry will enter upon a second era of short hauls. As Production—on a much reduced scale—moves eastward toward Consumption the long average haul will be greatly decreased. When the two centers are only one or two hundred miles apart, as may reasonably be expected, the result will be to reduce the average haul to between 300 and 400 miles, which is about what it was in 1914.

The reduction of the haul, however, will not necessarily result in cheap lumber, as the term was understood previous to 1919. The national cut may be reduced to 25 billions or less, while the population may increase to 150 millions or more. With no compensating sources of softwood supply, national per capita consumption of lumber must apparently drop below 200 feet, or to quantities such as European countries use. That means a keen demand and enhanced valuations for lumber. More over, timber grown as a crop must cost more than timber which required no toil. All these factors taken together will inevitably outweigh any savings that can be made on the decreased haul. There will always be some lumber, but it will never again be cheap lumber.

Eventually the whole lumbering industry will reach a fairly stabilized basis, somewhat like that which exists in the highly developed countries of Europe. When that stage arrives the centers of Timber Supply, Production and Consumption will all be found in the Mississippi Valley, fairly near each other and the center of Population, and no longer in rapid motion. That will be the graphic index of stability in the industry,—the end of the long trek of the American Sawmill and the adjustment of the American people to reduced wood rations.

And Now "Fawn Farms"

AS ONE means of reducing the number of deer on the Kaibab National Forest, the Forest Service and the Biological Survey initiated last spring the unique work of collecting fawns. Three fawn farms, as they are called, were established on the forest and crews of



THE FAWNS SEEMED INTERESTED IN THE CAMERA

men were employed to search out and collect as many baby deer as could be found. The fawns were taken to the farms and held in pens to be shipped this fall to persons in different parts of the country who have placed orders for live deer.

On September 1, each of the three fawn farms had collected some sixty fawns, and in addition local settlers had collected quite a number. It was necessary to place several dairy herds on the forest to supply milk with which to feed the young deer. The fawns have thrived especially well on cow's milk, and this fall a feeding of alfalfa was begun. The Forest Service has standing orders for the sale of approximately three hundred deer, and it is expected that many of these orders will be filled with fawns, which are gentle to handle and should be more adaptable to conditions of shipment and new environment.



BRAND'S 'GOLD MEDAL' PEONIES

WE are offering for sale this fall 12 new varieties of peonies never offered to Peony lovers before:

Blanche King, Ella Christiansen, Hansina Brand, Hazel Kinney, Laverne Christman, Mrs. A. M. Brand, Mrs. F. A. Goodrich, Mrs. Harriet Gentry, Mrs. John M. Kleitsch, Mrs. Romaine B. Ware, Myrtle Gentry, and Victory Chateau Thierry.

At the American Peony Society's Show held in St. Paul, Minn., the largest Peony Show ever held in the world, we were awarded the Society's **Gold Medal** in Class 1, the largest class of the show.

We were also awarded a **Gold Medal** on our new Peony, Mrs. A. M. Brand, and a **Silver Medal** on our new Peony, Myrtle Gentry. The judges, in making the award, said that the above list constituted the greatest display of new peonies ever made.

At the St. Paul Show, while these flowers were on display, we sold, in two hours' time, to people who saw the blooms, \$5,500.00 worth of roots—for delivery in the fall. We still have a few roots of each variety for sale. We will not offer them again until 1927.

You will want some of these the world's choicest and most beautiful peonies, for your fall planting; therefore, write today for Brand's **FREE** catalog of Peonies and Iris, giving varieties with full description, and prices.

BRAND'S BIG PEONY MANUAL, which we consider the most complete and up-to-date work ever written on the Peony, gives the history of that flower, its culture and varieties. Price 35c, but that amount may be deducted from price of your order.

THE BRAND PEONY FARMS
Box 36, Faribault, Minn.

Potomac River Estate and Game Preserve

Twenty-five miles from the national Capitol over excellent roads; short distance from Richmond-Washington highway; near Mt. Vernon and historic Gunston Hall; two miles tidewater frontage; approximately two hundred acres tide marsh; three hundred acres cultivated; three hundred seventy-five acres forest; adjoining two exclusive shooting clubs and between two large Government Reservations and game refuges; twenty-mile water view from high bluff; splendid building sites.

GAME

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AMERICAN FOREST WEEK ORGANIZES

Upon call of Hon. Frank O. Lowden, Chairman, a meeting of the American Forest Week Committee was held on September 28 at the Chamber of Commerce of the United States in Washington. Managing Director E. P. Allen and Secretary Miller Hamilton read reports on last year's observances of the Week and Col. William B. Greeley, Chairman of the Committee on Permanent Organization reported to the main committee which was represented by more than 35 co-operating organizations.

Cordial approval of the proposal for Canadian co-operation in the observance of this week was voted, and plans for agreement on a date for 1926 were discussed.

Mr. Lowden was unanimously re-elected Chairman and the following Board of Directors to guide the movement was elected:

William B. Greeley, Maryland, Chief of the United States Forest Service; Wilson Compton, Washington, National Lumber Manufacturers Association; Mrs. John Dickinson Sherman, Colorado, President, General Federation of Women's Clubs; Elbert H. Baker, Ohio, American Newspaper Pub-

lishers Association; Ovid M. Butler, Washington, The American Forestry Association; Arthur C. Ringland, Washington, National Conference on Outdoor Recreation; A. J. Hager, Michigan,

of Forests and Waters. Methods of financing the organization were discussed and referred to an executive committee consisting of R. S. Kellogg, Chairman; Mrs. John Dickinson Sherman, Wilson Compton, William B. Greeley and Elbert H. Baker.

At Mr. Lowden's request, E. P. Allen and Miller Hamilton will continue in the capacities which they filled so well last year. A. C. Ringland was elected Treasurer. The Executive Committee plans a meeting in November and it is hoped to get the work of the committee under way within a short time.

A VOICE FROM THE WEST

"A determined drive is to be made in the coming Congress against the National Forest administration. There will be charges of bureaucratic abuses, mal-administration and what not, but the real purpose of the crusaders is selfish. They want class favors at public expense.

"At the recent hearings in Oregon held by the public lands committee, with Senator Stanfield presiding as chairman, this intent has been revealed fully. Cattlemen and sheepmen appeared and contended not only that there ought to be no increase in grazing charges on the public domain, but that there should be a decrease. They expressed the view that it is the duty of the government to permit stock grazing in the National Forests at a schedule of charges that shall merely cover administrative costs. This view was given and repeated by many witnesses, and Senator Stanfield, himself a sheepman, was apparently in sympathy with it.

"This is purely, as before stated, a class demand—a demand for aid to a given line of industry at public expense. Lumbermen who buy timber from the National Forests are charged for the timber at fair commercial rates. If the stockmen's demands are justified, then the lumbermen ought to get their government timber at prices that will barely cover administrative costs. Such a demand as that would be held preposterous and so it should be. And the demands of the stockmen are likewise preposterous.

"The National Forests belong to all the people. Any private business or industry that commercializes them in any particular ought to pay fair commercial rates for what it gets. There should be no administration of the public domain in favor of any class. To say these things implies no general defense of federal bureaucracy nor any advocacy of extended federal control of the public domain."

Eugene (Oregon) Guard, September 14, 1925.

HOW DURABLE WAS THE WOOD IN NOAH'S ARK?

According to a report from the Forest Products Laboratory, Madison, Wisconsin, a correspondent wished to know the decay resisting properties and the possible existence today of the remains of Noah's Ark, which, he states, was made of gopher wood and pitched within and without. The Laboratory made the following reply: "Gopher wood probably

was a species of cypress (*Cupressus sempervirens*) which is more durable than most other woods. If the Ark were favorably located the wood might easily be in existence today. If it landed on Mt. Ara-

Friends of the Forest; R. S. Kellogg, New York, National Forestry Program Committee; E. T. Allen, Oregon, Western Forestry and Conservation Association; R. Y. Stuart, Pennsylvania, Department

rat and had not been subjected to force it might still be intact, as the altitude would insure a dryness sufficient to retard the growth of fungi."

CLIMBS 100 FEET AND TOPS TREE IN 18 MINUTES

W. H. (Slim) Hamilton made a great record when at the opening of the Long-Bell Lumber Company's operation at Long-



view, Washington, he scaled a white pine spar tree to the height of 100 feet, topped the tree and descended to the ground—all in eighteen minutes.

The *Disston Crucible* thus recounts the trick:

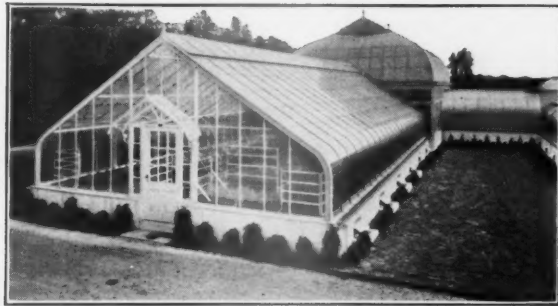
"With a stout rope fastened by one end to a heavy leather belt, while the other end is wrapped firmly about the wrist, and with a long tiller-handled saw dangling out of the way at the end of a light line, the spur-clad timber topper literally walks up the sides of the huge pines. When he reaches the lowest branches, often more than a hundred feet in the air, the lumberman fastens the free end of the rope to his belt, pulls up the saw, and leaning back with spikes braced, saws away with both hands. The job is one of the most dangerous in the lumber camps, for the severed top at the best can only narrowly miss the topper, and sometimes hits him, while he is helpless to dodge."

Spar trees are topped in overhead cable logging operations to avoid injury to men through accidental breaking and falling of the top. This is apt to happen as the tree sways and jerks under the strain of the cables which are secured to the tall trunk.

FIRE LAW ENFORCEMENT IN THE NORTHWEST

The Forest Service reports 97 court convictions for causing forest fires in Oregon and Washington up to August 20th. Other cases are pending.

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The supply of the following issues of the Association's magazine is very low or completely exhausted:

All issues previous to 1921.

April, September, October, November, and December, 1921.

October and November, 1922.

January and December, 1923.

It will be appreciated if members having copies of these issues, for which they have no further use, will send them to the Association so that they will be available to libraries, schools, and individuals who wish to complete certain volumes.



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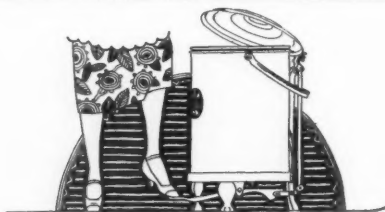
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NEW YORK STATE CAMPS FILLED

The public camp sites maintained by the Conservation Commission in the Adirondack and Catskill parks were enjoyed by more campers and automobile tourists last summer than in any previous season.

Three years ago in response to a strong public demand for increased recreational facilities in the forest preserve, the Commission began laying out camp sites on the main traveled highways large enough to accommodate several hundred campers at once. Their popularity was immediate and before the end of the season they were filled to capacity. Other camp sites were laid out as rapidly as funds would permit and this year four large sites were opened.

In addition to enlarging the camp sites the Commission appointed six motor cycle rangers to police the sites, furnish information to tourists and serve as an auxiliary to the forest fire protective force. Up to September 15 no forest fires resulted from the use of the camp sites which had been occupied by more than 100,000 campers.

ORGANIZATIONS CO-OPERATE AT NEW HAMPSHIRE MEETING

Colonel Henry S. Graves, of Yale University, made the principal address at the Forestry Conference held at Silver Lake, Madison, New Hampshire, early in September. Col. Graves spoke on "Federal and State Responsibility in Forestry."

The Society for Protection of New Hampshire Forests arranged the meeting in co-operation with the New Hampshire State Forestry commission, the Chocorua Mountain Club and the Appalachian Mountain Club.

MINNESOTA APPOINTS EXTENSION FORESTER

Parker Anderson, a graduate of the School of Forestry, University of Minnesota, and a forest engineer with the American forces in France from September, 1917, to February, 1919, has been appointed extension specialist in forestry with headquarters at University Farm.

Four agencies are co-operating in this new service offered in farm forestry—the agricultural extension service of the university, the State Department of Forestry, the Division of Forestry in the agricultural college and the United States Department of Agriculture.

Objects of the service are to assist owners of farms in establishing and maintaining woodlands, shelterbelts, windbreaks and other valuable forest growth, in growing and renewing useful timber crops, and in marketing and utilizing such crops.

McNARY-WOODRUFF BILL HEARING

A congressional hearing on the McNary-Woodruff Forest Purchase Bill, at which The American Forestry Association and a large number of other groups will present arguments for its passage, will be held during December or early in January. It is hoped that a joint hearing of the Senate Committee on Agriculture and Forestry and the House Committee on Agriculture may be held. A canvass of prominent members of both of these Committees has disclosed a keen interest in the McNary-Woodruff Bill and indications are strong that it will be reported favorably. In order, however, that this may be assured, all interested groups are asked to "stand by" and be ready to present convincing data in their particular fields which will demonstrate the demand for more National Forests located east of the Great Plains.

The American Forestry Association will send out prompt announcement of the exact date for this hearing as soon as it has been set.

MICHIGAN ORGANIZES CONSERVATION COUNCIL

A meeting of Conservation agencies held at Lansing on September 9 upon call of a group of leaders in Michigan, resulted in the organization of a Conservation Council which assumes an advisory capacity in the development of a comprehensive state policy.

Mrs. Edith Munger, Hart, Michigan, head of the State Audubon Society, was elected President and John W. Doelle, Grand Rapids, Executive Secretary of Michigan Division Izaak Walton League, Secretary. The Executive Board includes: Felix Pagenstecker, of Kalamazoo, Director of State Manufacturers Association; Harry Black, Flint, head of Conservation Committee, State Kiwanis Club; Arthur W. Stace, Grand Rapids, Feature Writer, Booth Newspaper Syndicate; G. E. Bishop, Marquette, Secretary-Treasurer, Upper Peninsula Development Bureau; Clark Brody, Lansing, Manager, State Farm Bureau.

An ambitious program was discussed. The next meeting is planned for December.

GRAVES GROVE DEDICATED

The Graves Grove of Redwoods comprising 157 acres on the Redwood Highway in Del Norte County, California, was formally dedicated and turned over to the State Redwood Park System by the *Save the Redwoods League* on September 26. A complete description of this grove, which is named for Henry S. Graves, Provost of Yale University and a director of the American Forestry Association, was given in the May, 1925, issue of *American Forests and Forest Life*.

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WASHINGTON STATE CONFERENCE PROPOSES REFORESTATION LAW

Undaunted by last year's veto of a carefully worked out taxation and reforestation measure, the Washington State Forestry Conference, which met in Seattle, October 1 and 2, redrafted the bill which features land classification and taxation relief.

One of the interesting sections of this bill requires the State Forest Board to classify and determine the value of forest lands not producing mature timber crops. This must be done upon request of County Officers or owners, or the State Forest Board, itself, may initiate action. All mature forest is eliminated from the provision of this act. No definite exemption with regard to a land tax is mentioned in the bill but provision is made for fixing the valuation of the land so that it may be taxed at a definite rate, while the timber crop is maturing. A yield tax is then required when the stumpage is cut, amounting to 12½ per cent of the current stumpage value.

In order to assure the constitutionality of this bill it is necessary that the voters of the state decide at the next regular election whether the constitution shall be amended. The conference has drafted the necessary amendment and it is understood that the forestry bill was introduced by Assemblyman C. W. Saunders, of Seattle, at the special session of the legislature called for October 9.

NATIONAL FOREST TIMBER RECEIPTS INCREASE

Timber sold on the National Forests during the first quarter of the present fiscal year yielded receipts amounting to \$1,055,165. This is the highest record of receipts from the sale of timber for any quarter year since the Forest Service has been in existence. Annual revenue from this source to the Federal Treasury now amounts to more than \$3,000,000 annually and the land upon which the timber is cut is under intensive protection and

management for the production of continuing forests.

NEW HAMPSHIRE EMPLOYS EXTENSION FORESTER

Under the provision of the Clarke-McNary Act the State of New Hampshire is now co-operating with the United States Department of Agriculture in Farm Forestry Extension work. Elmer D. Fletcher, of Durham, New Hampshire, has been appointed Forestry Specialist.

SOUTH CAROLINA FORESTRY ASSOCIATION

As this number of AMERICAN FORESTS AND FOREST LIFE comes from the press, the South Carolina Forestry Association is completing a conference in the State Library in Columbia. This meeting was called for October 20 by President Horace L. Tilghman, inviting lumbermen, members of the State Legislature and others interested, for the purpose of agreeing on a forestry bill to be presented to the General Assembly. The pending bill, calling for the establishment of a State Forestry Department, was to be used as a basis for the new measure.

CABIN OWNERS ASSOCIATION SACRIFICES CAMPFIRES

Telling co-operation with the Forest Service has been rendered by the "Arroyo Seco Canyon Cabin Owners Association" on the Angeles National Forest, California. The Arroyo Seco is a large watershed from which the city of Pasadena secures its principal water supply, and the Cabin Owners Association is made up of people who have summer homes within the canyon. Widespread effort has been made by this Association to curtail the use of campfires during the drier part of the early fall. Letters have been sent out, urging the use of oil stoves, thermos bottles and similar equipment for picnic and camping parties. Pressure has also been brought to bear on the Forest Service for discontinuance of issuing campfire permits in the Angeles forest during the present dry fall weather.

FOOL'S FIRE

Every morning in this country forest fires burn up the equivalent of a bushel basket full of \$10 bills. When the last bill is in ashes our daily waste of \$100,000 is accomplished and we square away for the day's work to replace with thought and sweat what folly has destroyed. Last year the perfect fools among us started some 24,000 forest fires. The loss was \$38,000,000—\$18,000,000 above the nine-year average reported by the Forest Service. All told, 92,000 forest fires were counted in the twelve months and a full third was due to carelessness or were of incendiary origin. Now is the time to use and not to destroy the irreplaceable forests.—*Collier's Weekly*.

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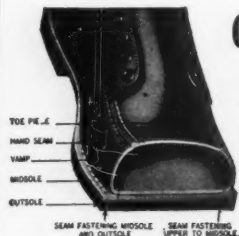


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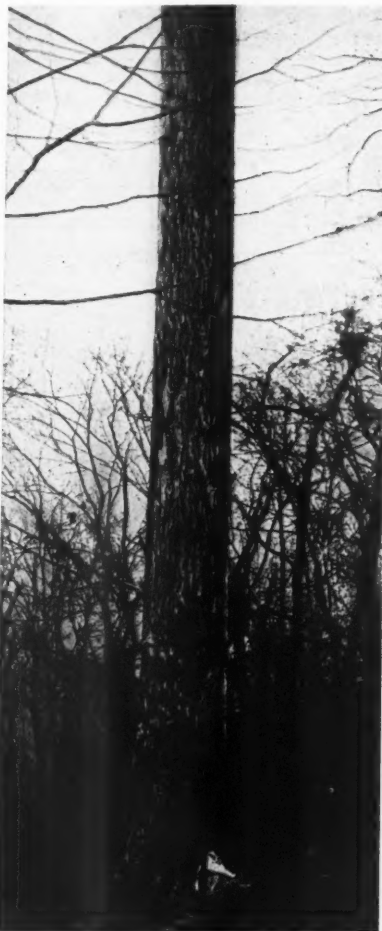
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THE LARGEST PECAN TREE

The following interesting letter has been received and is presented in the effort to ascertain whether the giant pecan is still standing. The editor will appreciate any information that is available regarding it.

"Editor American Forests and Forest Life:

"The claim made in the February number regarding the Louisiana pecan tree there described may, I think, be fairly challenged. I send you herewith a photograph of a pecan tree once (and possibly now) growing in Gibson County, Indiana, in the area between the Wabash, White, and Patoka rivers. The photograph was taken in December, 1875, and since then the forest which at that time covered practically the entire area has been cleared. This pecan tree measured 30 feet in cir-



THE GREAT PECAN

cumference at the ground, 18½ feet above the swollen base; had a spread of top measuring 100 feet across, and was about 175 feet high. Still larger pecan trees once grew in the bottom of the Lower Wabash, one measuring 8 feet in diameter being mentioned by Professor Collett in Cox's Geological Survey of Indiana (1873, p. 364), at that time growing near Sanborn, Knox County.

"In Gallatin County, Illinois, and at some other places along the Lower Wabash, many pecan trees of the original growth have been allowed to remain. I have not seen any of them, but from accounts given me by persons who have seen them I feel sure there are some that are larger than the Louisiana specimen mentioned.

"Very truly yours,

"ROBERT RIDGWAY.

"Olney, Illinois."

GEORGE P. BRETT PINETUM HAS THREE HUNDRED SPECIES OF CONIFERS

About eight years ago, Mr. George P. Brett, President of the MacMillan Company, New York, established at Fairfield, Connecticut, a pinetum in which it was his hope to have everything in the way of conifers which could be grown in that section represented. This pinetum which is located about five miles from Fairfield, contains about 200 acres of rolling, stony land, upon which there are now growing 300 species and varieties of conifers from all parts of the world. It is predicted that the tract will become a great center of interest for botanists, foresters and others who are interested in conifers.

SYRACUSE INAUGURATES NEW COURSES

Dr. William G. Vinal, who has recently become Extension Forester at the New York State College of Forestry at Syracuse, will be at the head of the new and extensive course in nature study designed to meet the demand generated through public interest in forest recreation and camping. The course is open to all students in all the colleges of the university.

Professor Reuben W. Smith, formerly of the Forest Products Laboratory and more recently a timber preservation engineer for a Western company, is in charge of a special course in wood preservation.

NORTH CAROLINA WILL HAVE FOREST NURSERY

Co-operating with the State College, the North Carolina Department of Conservation and Development has secured F. H. Claridge, graduate of the Yale Forestry School, to take charge of a forest nursery and give instruction in the College. By this arrangement a beginning will be made in providing stock needed for the reforestation of denuded lands in North Carolina. It is planned that a strong department of Forestry will be developed in time at the State College.

BUFFALO "COP" ARRESTED FOR PULLING UP FOREST

The tendency of thoughtless citizens in appropriating planted forest trees for their own use, received a vigorous setback recently at Warsaw, New York. A Buffalo police lieutenant, driving through the village, saw the occupants of three

automobiles helping themselves to trees which had been planted last spring by various civic societies. This planted an idea in the lieutenant's mind and he returned next day to secure a few trees with which to improve the landscape around his own home. He was promptly reported by an irate citizen, arrested by the village clerk and brought before Justice Glenn E. Charles. He pleaded guilty and was fined \$50.

TREE CHOOSES A NOVEL SITE

"The accompanying picture of a maple tree growing on top of a redwood stump is of a tree that stands in front of the village hotel at Scotia, California," writes Mr. Willis G. Corbett, forest engineer of the Pacific Lumber Company, at Scotia. "It is admired by all tourists who pass along the Redwood Highway, which runs from San Francisco to Crescent City, California. The men building the highway two years ago wanted to cut down the tree and blow out the stump, but the president of our company would not permit the destruction



of such a unique landmark. As will be noted, the sidewalk was swerved to preserve the stump. It is reported that a little girl living in Scotia planted the seed in the stump in 1888." The interest and pride in the tree is great, as indicated by the following lines, taken from a poem by a local author, inspired by the tree and printed in "Safety Jolts."

A maple tree on a redwood grows,
In a sawmill town, as the picture shows,
And the ivy grows on the redwood stump,
Where the water seeps from the "village pump;"

The sidewalk turns like a winding trail,
As it runs along to a shady vale.

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The Labrador Retriever is a good-sized, jet-black, short-haired dog of high intelligence and lovable disposition. A Labrador Retriever will retrieve anything.

To popularize the breed in this country, several of the leading breeders offer puppies at \$75. each and up according to age. Labrador Retrievers may be seen at the Kennels on the Long Island estates of Marshall Field, Esq., Daniel Guggenheim, Esq., Clarence H. Mackay, Esq., and of other members of the Club. Details may be had by writing to address below.

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FOREST TREES

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DEER HUNTERS Here's The Hunting You've Been Wanting!

The Kaibab National Forest—Southern Utah—20,000 to 50,000 deer—opened by the Government for hunting from October 1st to November 30th—see announcement in last month's *Outdoor Life*—it's really the deer hunting opportunity of a lifetime.

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GAME REFUGE BILL WILL BE REDRAFTED

As result of the nineteenth annual convention of the International Convention of Game, Fish and Conservation Commissioners held in Denver on August 20 and 21, a committee was formed, representing the wild life organizations of the country to redraft the Game Refuge Bill into a measure which could be sponsored by all outdoor interests. The following members of this committee met in New York early in October and are now working on the new measure: William C. Adams, Massachusetts, for the International Association of Game, Fish and Conservation Commissioners; David H. Madsen, Utah, for the Western Association of Game Commissioners; John B. Burnham, New York, for the American Game Protective Association; George H. Selover, Minnesota, for the Izaak Walton League of America; Dr. T. Gilbert Pearson, New York, for the National Association of Audubon Societies. It is understood that only two material changes in the old Game Refuge Bill are being considered. The first concerns the source of revenue which under the new measure would be furnished by excise taxes from the sale of ammunition instead of by the sale of hunting licenses, while the second change would provide that the ranking official of each State Fish and Game Department would be authorized to pass upon the establishment of any Game Refuge within his State under the provisions of the Bill.

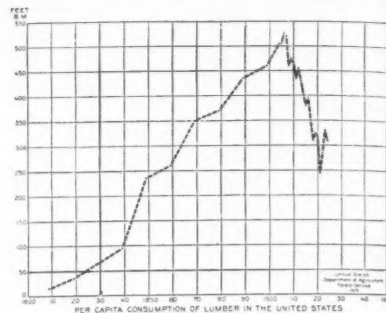
FIRE SEASON IN NEW YORK STATE

Forest fires in the Adirondack and Catskill fire towns, New York, totalled 304 up to September 15 with an area of a little more than 4,000 acres burned over and a damage of about \$5,000. The record in the districts outside the Adirondacks and Catskills is not so good. Four hundred and eleven fires were reported from these areas which burned over about 27,000 acres and caused almost \$23,000 damage. Unless there is a bad break during the late fall, however, this record will be a tremendous improvement over that of last year with a total of 715 fires as against 904 for the entire season of 1924. Fire hazard was low during the summer months except for a few days at the end of August and early in September, although the spring was especially dry.

HOW MUCH LUMBER DO YOU USE?

The average American citizen is using today approximately the same amount of lumber that he did just following the Civil War, according to the report, "The Principal Lumber Industries," just issued by the Bureau of the Census, Department of Commerce. But during the intervening period his annual consumption of lumber rose to rather dizzy heights until the year 1907, following which it has gradually dropped back to a figure comparable to that of more than fifty years ago. The

small chart reproduced herewith shows the trail of our per capita consumption of lumber in the United States from 1910 to 1925, and is both interesting and significant in its reflection of changing conditions in our National Forest cupboard.



In 1864 the per capita use of lumber amounted to 300 feet, in 1906 to 525 feet, and in 1924 to 310 feet.

In commenting on the sweeping rise in the national curve of per capita lumber consumption between 1840 and 1906 and the decline thereafter, the report says:

"It portrays the growing requirements of the bulk of the population during a period when the Northeastern, Lake, Central and Prairie States were engaged in a development comparable to that now taking place in the Pacific States. The steeply descending right limb of the curve reflects the decrease in average consumption on the part of the major portion of the population as a result of the increasing use of stone, steel, and concrete as building materials.

"The national per capita curve took a century to rise to its peak. In less than 20 years it has fallen more than one-third. While this rapid decrease in the consumption of lumber is no doubt due in part to the tendency toward more luxurious living in city quarters, to better preservative treatment and fire protection, and to greater economy in the use of lumber, on the other hand, there is no doubt that people use less lumber because, in consideration of its increased price, it has become less desirable compared with other building materials. The situation must apparently continue to grow more unfavorable to lumber use, as the principal factors now in view, including stumpage prices and distribution costs, seem to indicate higher prices for lumber.

"The most effective single step that could be taken to prevent undue advances in lumber prices would be to increase the amount of saw timber grown in the East, relatively close to the great bulk of the consumers."

Lumber imported from foreign countries, the report states, is increasing annually. On the basis of national per capita consumption, it was equivalent to 13 feet in 1920, 14 feet in 1922, and 18 feet in 1923. The report was compiled by the Bureau of the Census, in cooperation with the Forest Service.

GOVERNOR PINCHOT ISSUES ARBOR DAY PROCLAMATION

Governor Gifford Pinchot, of Pennsylvania, has designated October 23 as Arbor Day and Bird Day in the State. "If our children receive the proper conception of the conservation of our natural resources," declares the Governor's proclamation, "the future of our forests and wild life and our mountain streams will be assured."

PLANTED TREES SUFFER IN MARYLAND

September in Maryland this year was the second driest one on record. Continued drought caused the death of more than half of the 100,000 trees planted last spring throughout Maryland, according to Assistant Forester K. E. Pfeiffer. This includes a large number of conifers as well as hardwoods.

NEW YORK ACQUIRES TONGUE MOUNTAIN PENINSULA

Through the Conservation Commission the state has acquired, or contracted for, practically all of the Tongue Mountain peninsula on Lake George for park purposes. A total area of 9,054 acres have been paid for or are under contract, at an average value of \$18 per acre, and seven proposals covering a total area of 1,602 acres are pending, leaving only four lots aggregating 740 acres which are not yet under consideration. The title to five parcels, embracing 847 acres, has been approved by the Attorney General and the land paid for. In the land purchasing program of the Commission, the acquisition of land on Tongue Mountain has received special attention.

Purchases generally for the purpose of increasing the forest preserve have been restricted this year because only the unexpended balances of appropriations from former years were available. During the first eight months of the year, 26 new purchases were contracted for.

SNAKES AND FIRE

The Big Tujunga Canyon fire back of Pasadena, California, is said to have been caused by a camp fire, left unextinguished by the builder who was bitten by a rattle snake and had to rush to a neighboring town for treatment.

NEW ASSISTANT STATE FORESTER IN MARYLAND

John R. Curry, formerly stationed at Hot Springs, Arkansas, with the United States Forest Service, has been appointed Assistant State Forester of Maryland, to fill the place made vacant by the resignation of Gordon D. Marckworth. Mr. Curry is a graduate of Cornell University and will be placed in charge of Forest Protection and Fire Prevention in Maryland.

WOODS Arctic Eiderdown SLEEPING ROBE



Replaces Ten Heavy Blankets!

R. Honeyford, veteran woodsman of the north, writes of his Woods Arctic Eiderdown Sleeping Robe:

"The Arctic Eiderdown sleeping robe arrived and I find it takes the place of ten blankets and is much warmer than I had anticipated."

The Woods Arctic Eiderdown is a warm, snug, sleep-inviting robe of eiderdown. Real sleeping comfort in the open for every lover of the great outdoors.

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—says Navy man

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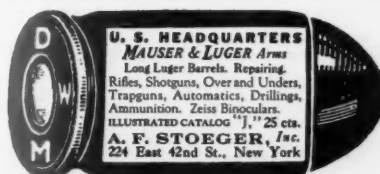
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Would you care for those whom disaster has made homeless? Would you show gratitude to the wounded veteran who courted death that war might give way to peace? Would you save life and prolong health? Would you teach children to love and to serve? If so, join the **American Red Cross** during the Annual Roll Call, Armistice Day to Thanksgiving—November 11 to 26, 1925.

This Space Contributed By
THE AMERICAN FORESTRY ASSOCIATION

Help Prevent Forest Fires IT PAYS

LUFBURROW CHOSEN AS STATE FORESTER IN GEORGIA

Burley M. Lufburrow, Supervisor of the Alabama-Benning National Forest, has been chosen State Forester of Georgia. Mr. Lufburrow entered the United States Forest Service in 1915, and was assigned to the acquisition of land for National Forests in the Appalachian Mountains. He saw service in the 10th Engineers, Forestry, in France and has a splendid record in fire control since his assignment to the Alabama-Benning National Forest. Recently his activities have extended to the holdings of the McClellan and Jackson Military National Forests.

Having been reared in Savannah, Mr. Lufburrow brings to his native state not only an intimate knowledge of Georgia conditions but a broad forestry experience. His resignation from the Forest Service took effect October 15 and he has assumed his new duties with headquarters in Atlanta.

LOUISIANA CHOOSES HINE FOR STATE FORESTER

Willard R. Hine succeeded V. H. Sonderger as State Forester of Louisiana on October 10. For the past two years Mr. Hine, who is a graduate of Cornell University, has been on the staff of the Southern Forest Experiment Station at New Orleans, and he brings to the work splendid knowledge of the forestry needs of Louisiana.

ATTENTION, FORESTERS!

AMERICAN FORESTS AND FOREST LIFE will print, free of charge in this column, advertisements of foresters wanting positions, or of persons having employment to offer foresters.

POSITIONS WANTED

TEACHING POSITION in Forestry wanted by young man 28 years old. Degrees in forestry from two of largest schools in country. Five years' practical experience with government and private concerns in both east and west. Also research experience and best of references. Address Box 24, care of **AMERICAN FORESTS AND FOREST LIFE**, Washington, D. C.

FOREST INSPECTOR, German, trained in science of forestry, served in five European countries (private and government positions) desires employment; qualified to manage large forest estate, or to take charge of any forest and engineering work; age 36, speaks five languages; best references. Address Box 25, care of **AMERICAN FORESTS AND FOREST LIFE**, Washington, D. C. (9-10-11)

GRADUATE FORESTER with 18 years' experience, desires position as Forester or Superintendent, on private estate; with private timber company or timber manufacturing company. 41 years of age. An active willing worker. Address Box 26, care of **AMERICAN FORESTS AND FOREST LIFE**, Washington, D. C. (9-10-11)

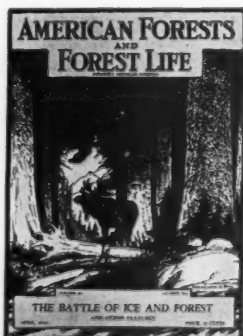
GRADUATE FORESTER, two years out of college. Experience in lumber camps and forest management work. Desires permanent position. Address Box 27, care of **AMERICAN FORESTS AND FOREST LIFE**, Washington, D. C. (10-11-12)

POSITION desired as city or county forester or as superintendent of an estate. Trained in forestry, landscape gardening, botany, horticulture, agriculture. A. B. and M. S. degrees. Married. 29 years old. Have been engaged in college teaching and experiment station work but must seek out of door work on account of my eyes. Would also consider other employment. Address Box 28, care of **AMERICAN FORESTS AND FOREST LIFE**, Washington, D. C. (11-12-1)

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November, 1925.

TENNESSEE PEOPLE AROUSED TO ACTION BY UNAKA FIRE

As a result of prompt aid given by the fire organization of the Tennessee State Forestry Department at the recent fire in the Unaka mountains of Greene County, citizens of this region have undertaken the organization of a co-operative forest fire association. The movement has the backing of the local Chamber of Commerce, the press and the Rotary Club. A plan is being worked out for close co-operation with the State Forester's office.

PRACTICAL WORK IN AIRPLANES

On a recent fire in a California forest, an airplane with its observer went right down into the canyon where the fire was burning and obtained a better knowledge of the situation than the men on the ground could get. It was seen that more men were needed so upon the return of the plane 25 men were equipped and started across the mountain. Soon after the departure of the men, the Ranger in charge of the fire telephoned for 25 additional men and equipment. He was rejoiced, of course, to hear that they were already on the way. The same plane took telephone wire to the fire camp for the installation of an emergency telephone line to give communication to the outside.

Recently 100 blankets for fire fighters were sent from Mather Field, Sacramento, to the Big Tujunga fire near Pasadena on the Angeles National Forest, a distance of 450 miles, in four hours. Supervisor Jordan, of the Santa Barbara Forest, claims that it is possible to put into a fire camp anything in the way of supplies and equipment that can be dropped from a plane and that one plane can handle the material faster than ten head of pack stock.

SUPREME COURT DECISION ON WASHINGTON SLASH LAW

According to *The Forest Patrolman*, a decision of the Supreme Court of the State of Washington in a case between the Great Northern Railway Company and F. B. Oakley, of the Danaher Lumber Company was filed July 13, 1925, for clearly defined responsibility for slash hazard under the Washington Forestry State law. Slashings are declared a nuisance.

The laws of Oregon and Idaho dealing with the disposal of slash from logging operations are almost identical with those of Washington and this decision will be of considerable interest to protection men in the three states, as well as the country at large.

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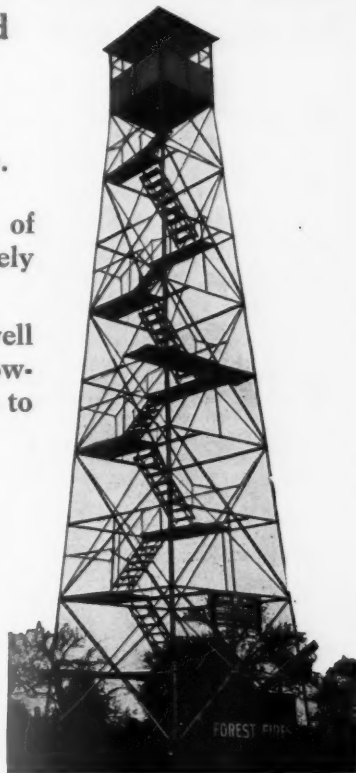
to meet the requirements of Forest Service is most widely used.

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Harvard Forest

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A forest experiment station of two thousand acres, 14 years under management on a sustained yield. Large variety of silvicultural treatment in progress. Logging, milling, and marketing annually carried on. Extensive plantations established from the Forest nursery.

Competent graduate students accepted as candidates for degrees of M. F. or D. S.

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The Forestry Department offers a four-years' undergraduate curriculum, leading to the degree of Bachelor of Science in Forestry.

Opportunities for full technical training, and for specializing in forestry problems of the northeastern States and Canada.

Eight-weeks' camp-course required of all Seniors in Forestry, in practical logging operations in northern Maine, under faculty supervision.

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Forestry teaching in spring and fall at Manitou Forest (a 7,000 acre forest belonging to the School) and the winter term at Colorado Springs.

Write for announcement giving full information.

NEW YORK UTILIZATION CONFERENCE

Plans for the New York State Utilization Conference to be held November 12 at the New York State College of Forestry, Syracuse University, under the joint auspices of the forestry college and the Empire State Forest Products Association, are complete. This gathering of representatives from the industries, institutions and administrative departments that have to do with the forests or the uses of wood, is an outgrowth of the National Utilization Congress held last year in Washington. It is carrying the purpose of that meeting nearer the field of practical operations. The proposed program includes talks by Secretary Hoover, Congressman Snell, Congressman Clarke, co-author of the Clarke-McNary bill, Director Winslow, of the United States Forest Products Laboratory at Madison, Wisconsin. The meeting will take place in the Assembly Room of the Forestry College and a banquet will be held at the Hotel Syracuse in the evening.

Some of the organizations participating are: The New York State Builders Exchange, New York Lumber Trade Association, Northeastern Retail Lumbermen's Association, National Lumber Manufacturers' Association, American Wood Preservers Association, and the Association of Wood-Using Industries; also the American Paper and Pulp Association and the National Association of Wood Turners.

ACTIVITIES ON THE MILITARY FORESTS

A good deal of interest has centered on the new Military National Forests which are widely scattered and comparatively small in area. The activities of a surveying party on the Lee, Eustis and Humphreys National Forests, is thus described in a Forest Service news letter:

"At times there would be hours at a stretch, while we were crossing timber, wading swamps and providing food for mosquitos or chiggers, when no signs of civilization were encountered, but always the 'put-put-put' of motorboats, the roar of airplanes, or the crack of rifle fire could be heard.

"On Lee National Forest there is a population of one person for each 45 acres of land. Within 5 miles of the forest there are some 50,000 inhabitants.

"Nearly 40 tree species are found on these forests, including 6 conifers and over thirty hardwoods. Humphreys is covered with a mixed hardwood stand. Eustis is the only forest in the United States that raises oysters! The extreme drought this summer dried up most of the peanuts on Lee Forest. Other products of these Forests include corn, cotton, oats, wheat, watermelons, sweet potatoes and fish."

The first fire reported on the Humphreys National Forest occurred on September 11, as a result of military operations by some engineer troops from Fort Humphreys. Part of these operations consisted of building a bridge over a ravine and when it was finished, blowing it up with T.N.T. This done, some of the smouldering particles having been blown into the woods, a forest fire was soon under way. The officer detailed to see that the fire was out did not finish his job, and the same organization responsible for the fire had to turn out later to put it out.

BOYCE THOMPSON INSTITUTE SECURES DR. COULTER

Dr. John M. Coulter, head of the botany department of Chicago University since 1896, joined the resident staff of the Boyce Thompson Institute for Plant Research at Yonkers, New York, on October 1. Dr. Coulter, known as the dean of American botanists, as a boy of 21 was a member of the Hayden Rocky Mountain expedition, sent by the United States Geological Survey to report authentically on the rumored marvels of what is now Yellowstone Park. Though a geologist primarily, he brought back such a rare collection of mountain flowers, that he was dubbed the botanist of the expedition, and taking them to the famous Asa Gray of Harvard, he laid the foundations of his renown as a botanist, and formed the nucleus of his later work on the Rocky Mountain flora. On this expedition he was the guardian and observer of Old Faithful, which proved to be the most interesting of the group of geysers studied by the expedition.

UNCLE SAM SEEKS SERVICES OF FORESTERS AND ECONOMISTS

Up to November 17, the United States Civil Service Commission will receive applications for Foresters and Economists at salaries ranging from \$2,400 to \$5,200. In these positions the four grades to be filled are Senior Forester, Forester, Associate Forester, and Assistant Forester, and the same grades for Forest Economists at corresponding salaries. Candidates will not be asked to report at any definite place but will be graded on application data and submission of thesis. Full information may be secured from United States Civil Service Commission, Washington, D. C.

While the announcement does not indicate the exact work to which these men will be assigned, it is assumed that they will be used on the forest taxation studies to be undertaken through the provisions of the Clarke-McNary Act.

Oregon School of Forestry

Located in the center of the last great stand of virgin timber in the United States.

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PARK AND FOREST BOUNDARY ADJUSTMENTS PROPOSED

The Commission on National Parks and Forests appointed by the Executive Committee of the National Conference on Outdoor Recreation completed its inspection trip of the National Forests and National Parks in the west early in September. It is understood that Chairman Henry W. Temple will submit the Committee's report early in November.

The plans and personnel of this Commission were published in the August number of American Forests and Forest Life. Its effort to adjust certain National Forest and Park boundaries, it is understood, were eminently successful in that decisions were reached and recommendations agreed upon for two of the proposed changes. These were (1) the proposed addition to Yellowstone National Park of lands now in the Teton, Shoshone and Madison National Forests and (2) proposed additions to the Grand Canyon National Park of lands now in the Kaibab and Tusayan National Forests. On the other hand, inability of two members of the committee to continue the field examination made it impossible to work out the plan for creating a "Cliff Cities National Park" from lands now in the Santa Fe National Forest or the creation of the "Denver" or "Mt. Evans National Park" from Pike National Forest territory.

It is understood that the report will recommend that a separate unit of Yellowstone National Park be created from the Teton Range and the headwaters of the Yellowstone and Thorofare Rivers while the headwaters of the Shoshone and a part of the Snake River drainage will be recommended for transfer from the Park to the Teton National Forest. Local Park and Forest officers have been requested to study the west boundary affecting the Targhee and Madison National Forests.

The Commission is reported to have agreed upon recommendations which will add 45,000 acres of the Kaibab National Forest to the Grand Canyon National Park. This addition would make possible the development of a necessary road and trail system located entirely on National Park land and would include Little Park, a much needed center for Park activities. An addition of about 7,000 acres on the south boundary of the park from the Tusayan National Forest was also studied along with the transfer of 3,500 acres of Park land valuable for grazing and timber production to the Tusayan National Forest.

Release of the Commission's report with specific recommendations and further studies by this useful organization are anticipated with great interest by all conservation enthusiasts.

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Public Lands Committee Hears From Fire Protection Interests

State Forestry officials, stockmen, representatives of protective organizations and members of the Forest Service and Interior Department appeared before the Senate Committee on Public Lands at Portland, Oregon, September 8 and 9 to offer testimony on the inadequate protection of unappropriated public lands in Washington and Oregon. According to L. F. Cornemiller, Deputy State Forester of Oregon, the so-called "grant lands" in these two states embrace almost ten million acres, much of which is timbered. The fact that no money is appropriated to the Department of the Interior for patrolling or protecting these lands makes it necessary for private associations to spread their protective work over lands which they do not control.

Difficulties are also experienced because of State laws which require adequate slash disposal on all logging operations except those which take place on the lands controlled by the Interior Department. The Senate Public Lands Committee was represented by Senator R. N. Stanfield of Oregon and Ralph H. Cameron of Arizona. George Bowden, Counsel for the Committee, was also present. An appropriation of \$25,000 a year for the protection of the lands in question was urged. E. T. Allen, of the Western Forestry and Conservation Association, called to the attention of the Committee the need for larger appropriations to control timber-destroying insects and diseases in the Northwest.

Trend of the State Park Movement

(Continued from page 674)

good to a degree but what is the underlying impulse? The real force behind the movement emphasized by the slogan is not the preservation of scenery but the urge of motor travel. The real activity is to provide for motor parking and camping. But this is not the state park idea in origin or in truth.

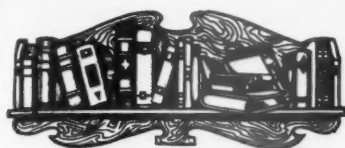
Such activity is not wrong in itself; whether wrong or right it is forced upon us by the prodigious growth of motor touring. Think for a moment of the highway of the future: the main lines will have separate roads for trucking and for travel,—already this is planned for certain congested regions,—the automobile will travel on truly scientific roads, thoroughfares in a very literal sense: low degree of curvature, banked curves, no grade crossings, side ramps at intervals for local travel to enter at an easy angle, no objection, of course, to adornment on the side but high speed with safety the ruling thought. Then, motor camps with all conceivable up-to-dateness every hundred miles.

Is it not true that in the more searching analysis this proves to be the main-spring of our purpose? Let us be quite clear sighted and candid about it. We should not confuse the motor road and motor camp movement with the state park movement. They are related but not identical. Frank recognition of this will aid to sound progress. Speaking broadly, that we make the point distinct, motor camps, which at best are not inspiring and at worst are simply horrid, should not be placed where they detract from charm of scenery. It is always possible to locate motor camp grounds so that they do not obtrude. It is not possible to uphold scenic values thus violated.

There need be no fear but that, even in the far future, should it be necessary in order to meet a demand, whole farms can be taken over for motor park purposes in places not harmful to fine scenery. There is, on the other hand, grave danger that in the relatively near future our beauty spots will be destroyed for time to come unless they are taken over and cherished. Let us have motor camps in abundance, every hundred miles if you choose, even though there be a suggestion, not to say a hope, that a possible overmuch of motoring enthusiasm may yet go the way of bicycling and roller skating. But, as said the far-sighted superintendent of one of our most noted National Parks in a talk with me, "the greatest menace to our National Parks is their vulgarizing." That is a valuable term to keep in mind; we must guard against the "vulgarizing" of our state parks.

Let us deliberately plan to place the motor camps outside the state parks; to uphold as the password of humanity into our state parks, re-creation, not recreation in its popular sense; to keep scenery inviolate, to lead the people to approach it with respect, not desecrate it, and to try to instil into the comprehension of the American public the finer sensibility of the Japanese for scenery and the veneration of the red Indian for the sacred mountain and the spirit lake. The task will not be over until the feeling for art and beauty is the feeling of the people.

"A State Park Every Hundred Miles;" I would not so much criticize it as press for its right application. For this reason I had rather see it rendered thus: "A state park wherever nature smiles; a motor camp every hundred miles."



BOOK REVIEWS

OUR TREES AND HOW THEY SERVE US. By Rufus S. Maddox and Almon E. Parkins. Charles Scribner's Sons, Atlanta, Georgia. Price 73 cents (Tennessee state contract).

The authors have presented in this little book, which is designed as a text for grammar grades, an interesting array of fundamental facts about trees and forests. Recognizing that the complicated problems of forest economics are beyond the grasp of children, the writers have appealed to them by pointing out the usefulness of trees as struggling living things which are the friends of the human race. Simple keys for the identification of the more important trees are included and these are accompanied by helpful line drawings. Another special feature which makes the book valuable for teaching, is the use of questions in captions under the illustrations. Questions are also included at the close of many of the chapters, and suggestions are given for the celebration of Arbor Day.

Although written for use in the schools of Tennessee, where forestry instruction is wisely required by law, this book should find a wide general use.

PRACTICAL TREE REPAIR. By Elbert Peets. Published by Robert M. McBride & Company. Price \$2.50.

This book is the only complete treatise, popularly written, on tree surgery in the American field. First published in 1913, it has been revised to incorporate information on tree surgery which has since been obtained from study and experience. The book is devoted entirely to the prevention and repair of physical injuries to trees such as are caused by storm, accidents, insects, rot producing fungi, etc. It deals with the principals of tree growth on which curative operations must depend, and also includes an account of the measures necessary to prevent decay and attack of insects.

Mr. Peets writes with authority, and deals with the subject in an unbiased and exceedingly constructive manner.

RECOLLECTIONS OF MY FIFTY YEARS' HUNTING AND FISHING. By William B. Mershon, published by The Stratford Company, Boston, Massachusetts. Price \$3.50.

Beginning with the time when he played hooky from school to go bird hunting, Mr. Mershon goes through half a century of hunting and fishing experiences, the equal of which perhaps, will never be witnessed again in the United States. He tells of

bags brought back from hunting trips and catches of fish from Michigan that would today doubtless seem like "game hogging," if indeed such great quantities of game could be located. In those days of plenty, however, the idea was to bring back a large haul. Mr. Mershon in the introduction of his book, expresses doubt that the sportsman of old was the cause of our diminished supply of wild life, in spite of the fact this his trips yielded such bountiful results. He lays the blame for this decrease in game almost entirely to changed environment.

Mr. Mershon's principal purpose in writing the book is for the information of readers in the years to come. The comparison of his "days of real sport" with the sport of today will to many seem unbelievable. What the comparison will be fifty years hence remains to be seen. The book is written in an intimate and interesting style, contains many letters and extracts from records of different hunting trips, and is excellently illustrated.

PICTURESQUE AMERICA—Its Parks and Playgrounds. Edited by J. F. Kane. Resorts and Playgrounds of America (New York). De luxe edition. Price \$15.00.

Compiled and edited by John Francis Kane, of New York, this volume is comprised of special articles contributed by men and women well known in the world of outdoor writer-folk, with the purpose of making available a book which will help Americans re-discover America in all its beauty.

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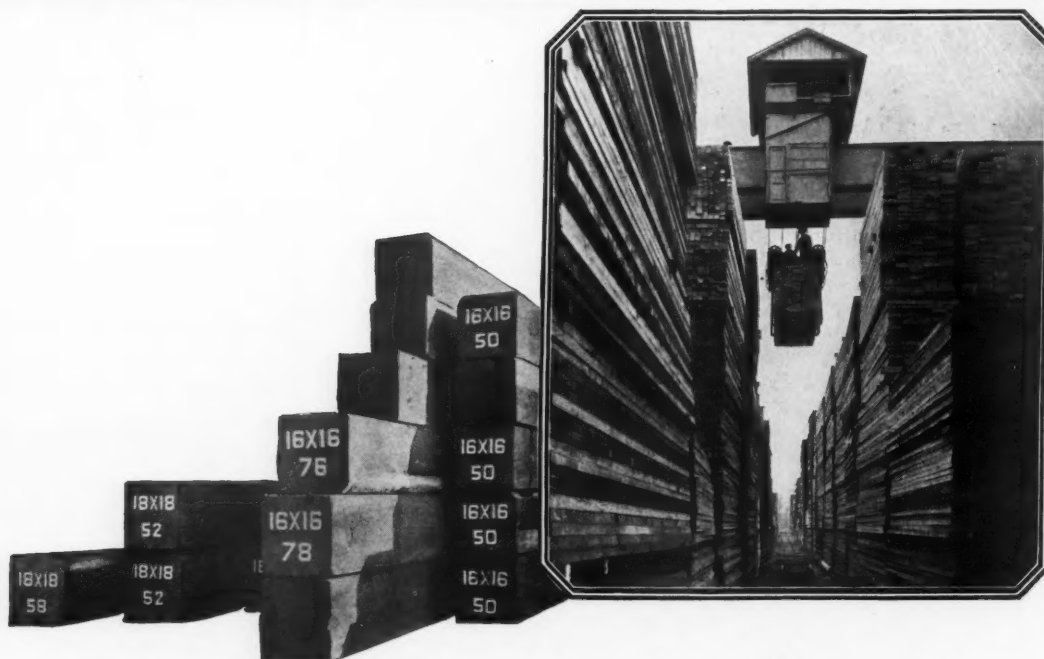
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